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The Mississippi Doctor

Official Organ of the

Mississippi State Medical Association

and the

Mid-South Postgraduate Medical Assembly

W. H. Anderson, M.D., Editor-in-Chief

Mildred P. Anderson, Assistant Editor

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JUNE 1953 — MAY 31, 1954

VOLUME 31

Published at Booneville, Mississippi

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Painful Rectal Conditions[*]

L. J. O'NEIL, M.D.
New Orleans, La.

Patients with rectal pain are anxious for relief but resistant to examination. The fear of increased pain usually necessitates anesthesia for adequate investigation; the therapy indicated is effected at the same time. A series of personal cases was reviewed and the distribution was as follows:

Chronic Fissure	
children	5
adults	52
Prolapsed and Thrombosed hemorrhoids	22
Thrombosed polyps	6
Abscess	
Submucous	4
Perirectal	7
Carcinoma of the rectum	2
Carcinoma of the anus	2
Total	100

Chronic anal fissure was the most frequent lesion causing pain. There were four females to each male. Previous rectal surgery had been done on fifteen patients. Five children required operation because of fissure. Pain on defecation was the leading symptom; it varied in intensity from a burning sensation to a knife-like stab with varying degrees of soreness afterward for a few minutes or several hours. The dread of a painful stool led to the use of purgatives until a liquid or semiliquid stool of small calibre resulted. On examination a sentinel pile was often visible in the posterior arc of the anal canal. Digital examination was refused at first but on subsequent visits the anal canal was found to be markedly contracted so that the finger could not be introduced. An anaesthetic ointment to be inserted before each bowel movement and hot sitz baths immediately after each stool were tried. If this failed the patients were submitted to surgery.

The operations were done under spinal and usually the lesion was visible in the posterior arc of the anal canal. The induration and inflammation associated with the fissure narrowed the aperture so that the finger was introduced with difficulty even under the anaesthesia. Spasm and fibrosis of the subcutaneous component of the external anal sphincter muscle were encountered invariably. Complete excision of the scar tissue produced immediate dilatation of the sphincter. At times there was a web-like arrangement of the fibrous strands and each fibre was removed. If the associated spasm of the sphincter was marked the subcutaneous sphincter was divided. The results were gratifying in all cases.

Thrombosed fibro-epithelial polyps which were coexistent with a fissure and which appeared to originate in a papilla were encountered in six cases. These patients complained of intolerable pain and the diagnosis could be made on palpation prior to surgery as the anal canal was spastic but not fibrotic. However, anaesthesia was necessary for removal.

HEMORRHOIDS

Hemorrhoids with prolapse and thrombosis were seen in twenty-two patients. Although the clotting produced extensive perianal edema and swelling, immediate excision of the entire area of involvement was done. This proved to be a satisfactory procedure as relief of the pain was rapid and the period of disability was minimal. The edema present facilitated removal.

ABSCESS

Incipient abscesses presented the greatest difficulty in diagnosis. Although they were seen frequently, two or three days elapsed before the local changes were defined enough to make the diagnosis. Submucous abscesses produced a concontinuous throbbing pain within the rectum itself and on the third day most of them developed fever or chills or both. At that stage the soft fluctuant mass was palpable within the anal canal. A liberal incision was made along the entire length of the abscess to insure adequate drainage and to prevent extension out into the perirectal tissues with subsequent fistula formation. Immediate relief was obtained. Careful palpation of the skin around the anus usually revealed a small area of induration in the early perirectal abscesses. The patient would usually disclose the involved area by pointing to it as the throbbing site of pain. Again a wide incision was made as soon as the induration was palpated and usually one or two cc. of pus was obtained although the area of induration appeared quite small. No attempt was made to search for an internal opening at this stage but all patients were advised that a fistula would probably develop later.

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[*] Presented before the Section on Surgery of the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

CARCINOMA

Two of the patients had a low-lying carcinoma which was readily diagnosed on digital examination but which barium enema had failed to disclose. Carcinoma of the anus was the diagnosis established by biopsy in two chronic anal ulcers which had been treated with lotions and ointments for nearly eighteen months each.

CONCLUSIONS

Chronic anal fissures required excision of the scar tissue for successful treatment.

Prolapsed and thrombosed hemorrhoids responded well to immediate surgery.

Persistent lesions should be biopsied.

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§

The Tormenting Accompaniments of Menstruation*

S. LEON ISRAEL, M.D., F.A.C.S.†
Philadelphia, Pa.

The annoying symptoms from which nearly one-half of women suffer in minor degree prior to menstruation are well known. These menstrual molimina, including fatigue, irritability, backache, fullness of the breasts, and a vague sensation of pelvic discomfort, are usually tolerable. There is, however, an exaggerated symptom-complex in which one or all of the moliminal manifestations are intolerable. It occurs in varying intensity but maintains a fairly constant pattern in any one individual. The composite picture includes dysmenorrhea, premenstrual tension, and cyclic pain of the breasts. Any one of this trio may appear to be predominant but some patients suffer from all three.

Dysmenorrhea, the clinical pattern, which is too well known to require description, is difficult to appraise because of its subjective nature. The ability to tolerate pain varies considerably, depending largely upon one's constitutional and psychic background. This makes the proper evaluation of any therapeutic agent perplexing. The problem is further complicated by the fact that there are two kinds of dysmenorrhea, namely, primary and secondary. We are not concerned here with secondary dysmenorrhea which is usually associated with some gross pelvic lesion. The exact cause of primary dysmenorrhea is unknown. Innumerable theories have been advanced in explanation but none of them is applicable to all instances of such dysmenorrhea. The colicky pain has been variously attributed to uterine hypoplasia, obstruction of the cervical canal, psychogenic disorders, endocrine imbalance, and allergic states. More recent investigations place primary dysmenorrhea in the realm of a constitutional ailment, a disturbance of the autonomic nervous system which, at the time of menstruation, results in pathologic modification of the nerve impulses transmitted to and from the uterus. This neurogenic concept is somewhat strengthened by the fact that primary dysmenorrhea occurs most frequently in asthenic nulliparous women who have a low threshold for pain. It is also supported in part by the findings of Davis who described the presence of subacute or chronic neuritis in the peripheral sympathetic nerves of the uterus[1], and by the work of Bickers who demonstrated that an altered myometrial motility accompanies the pain[2].

Premenstrual tension is readily recognized because it is characterized by an abrupt, cyclic alteration of personality which appears from ten to fourteen days prior to the expected menstruation and terminates rather dramatically with the onset of the flow. It is often initiated by a foreboding sensation of impending insecurity which may so alter the patient's behavior as to be manifest to observers. Whenever the monthly tension reaches its maximum height, the manic activity of the patient beggars description. The physical unrest, constant irritability, hair-trigger temper, insomnia, vertigo, and headache, in addition to recurring episodes of depression and hebetude, tax the endurance of both the patient and her family. The monotonous periodicity of the syndrome evokes anxiety of anticipation. Some of the time, it is accompanied by painful turgidity of the breasts and some dysmenorrhea. As with any clinical entity, not all of the symptoms are present in a single patient. Most frequent, however, is the periodic alteration of personality, imparting the impression of recurrent frenzy.

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* Presented at the sixty-fourth annual session of the Mid-South Postgraduate Medical Assembly, February 10-13, 1953, Memphis, Tenn.

† From the Department of Obstetrics and Gynecology, Graduate School of Medicine, University of Pennsylvania.

The occurrence of cyclic breast pain is not surprising since the breasts, like the uterus, show remarkable cyclic variation in structure, synchronous with the ovarian cycle. These physiologic alterations in the morphology of the breast vary with each woman of reproductive age. Most women experience a sensation of fullness and acquire some tenderness to pressure of the breasts during the week preceding the menstrual flow. However, in some, the premenstrual pain and palpable nodosity assume pathologic proportions, requiring active treatment. This condition, although often merely an accompaniment of premenstrual tension, is termed mastodynia, cyclomastopathy, or periodic mastalgia. At intervals, the cyclic pain of the breasts acquires a degree of chronicity and the discomfort persists throughout most of the cycle. In such instances, there is usually a diffuse pebbly induration of the periphery of the mammary glands, a condition known as adenosis or mazoplasia.

ETIOLOGY OF MENSTRUAL DISTRESS

Considering dysmenorrhea, premenstrual tension, and cyclomastopathy as localized manifestations of the same phenomenon, particularly because of their striking periodicity, it is logical to seek a single cause for them. The origin of the tormenting symptoms has been ascribed to one or more of three mechanisms, namely, hormonal imbalance, purely emotional factors arising from the deep psycho-biologic concomitants of menstruation, and the existence of a menstrual toxin.

The hormonal disturbance has been imputed to a disordered metabolism of both estrogen and progesterone. The mechanism by which the suggested steroidal alterations give rise to such periodic distress has been laid to their capacity to evoke retention of the sodium ion, giving rise to excessive fluid in various tissues. Menstrual edema has thus been attributed to the retention of sodium chloride and water[3]. The pathogenesis of the steroidal imbalance is, however, not clear from our present knowledge.

It is impossible to escape the conviction that the abrupt change in behaviour during episodes of premenstrual tension is based on deep-seated psychogenic reasons. The one fairly constant denominator, present in most patients who suffer menstrual distress, is the association with other functional derangements, such as dysparcunia and indeterminate gastro-intestinal symptoms. These are found especially in immature individuals who are manifestly dependent upon others. The dependency may masquerade behind a façade of apparent aggressiveness, but, when exposed, the groping for security may be recognized. Even if an organic etiology were to be found, there would still be a complex psychic overlay because of the emotional references universally linked to the phenomenon of menstruation.

Various theories have been adduced regarding the origin and nature of an alleged menstrual toxin. Macht, on the basis of his investigations of the physiology of the menotoxin on living plants (phytotoxicology), believes that the substance is related both pharmacologically and chemically to cholesterol, oxycholesterol, and the gonadal steroids, all of which are, in turn, related to a mother chemical, phenanthrene[4]. The Smiths, on the other hand, believe that the menstrual toxin is of endometrial origin, the product of tissue catabolism during the menstrual cycle. They find it in the euglobulin fraction of menstrual discharge, and have been able to demonstrate some of its properties in the circulating blood of women during menstruation, late pregnancy, toxemia, and prolonged labor[5]. The Smiths postulate that menstrual distress, with the possible exception of mastodynia, is ascribable to local congestion and irritation from the vascular effects of menstrual toxin from a persisting secretory endometrium, the chief source of the disturbing material, and that primary dysmenorrhea is the result of uterine colic, arising from the effect of the toxin on the myometrium. Such a uniform explanation of menstrual distress is most welcome, particularly if substantiated by some experimental method. If, for instance, it could be demonstrated that menstrual distress never occurs in women who have both ovaries but have no uterus (the endometrium of which is the site of formation of menstrual toxin), there would be a good basis to accept the menstrual toxin explanation of the multiple symptoms. In the absence of proof, it is perhaps significant that the menstrual molimina lessen just as soon as shedding of the endometrium and the diuresis of menstruation begin, processes, which, according to the Smiths, represent the removal and excretion of the toxin. However, whatever the mechanism of its formation and whatever its chemical identity, such a menstrual toxin could certainly be responsible for the premenstrual intoxication of women.

It is obvious that disagreement exists concerning the specific pathogenesis of menstrual distress. It is also apparent that one or more of the symptoms may predominate in any one patient and, for that reason, the etiologic pattern is not necessarily identical in every instance. At this writing, it appears to be acceptable that the most fundamental disturbance occurring premenstrually which may give rise to varied symptoms is transitory tissue edema. It remains unsettled whether the edema results from retained hormonal products, from chemical alterations, or from a toxic metabolic product such as menotoxin. Irrespective of the nature of the exciting mechanism, it cannot be denied that emotional disturbances and psychogenic traumata not only aggravate the symptoms but evoke additional ones.

TREATMENT OF MENSTRUAL DISTRESS

The therapy of any disorder which does not have a proved etiology and a clarified pathogenesis cannot rest on a solid foundation. Menstrual distress is no exception to this rule. Moreover, inasmuch as there is no single clinical entity, there is likewise no single therapy which corrects the multiple manifestations. It is essential that the treatment include measures aimed to alleviate the periodic tension, to control the possibly basic recurrent edema, and to relieve the cyclic pain of uterine colic and mastodynia. In addition, since a metabolic disorder is being treated, it is important to correct whatever of the patient's physical pattern requires improvement. A complete survey of the whole patient must be made to exclude the presence of any disorder which might preclude some of the planned advice. The following multiple approach is recommended:

1. *Psychotherapy.* The first requisite in the type of psychotherapy recommended here is the ability of the physician to be a sympathetic listener. The aim of this phase of treatment is to have the patient acquire an improved insight of her physical symptoms and to achieve some recognition of the influence of emotional conflict on them. It is best to avoid laying emphasis on the fact that a psychological form of treatment is being administered, an objective easily accomplished when other measures are employed at the same time. Using multiple interviews, the physician permits free ventilation of the patient's anxiety and tension. The aim is not to develop a cure for her basic lack of security but rather to have her shift the physical manifestations away from the menstrual cycle. It is important to direct her thinking toward the disciplined management of the really disturbing problems in her immediate life situation, problems which may involve parents, husband, children, housing, money, occupation, and sex. A complete psychoanalytical approach is not essential, for many of these patients respond to the most superficial type of psychotherapy.

2. *Sedation.* Coupled with the brief psychotherapeutic interviews, is the necessity to proffer mild sedatives from time to time. The administration of a sedative during periods of particular stress should be accompanied by reassurances that the illness from which the patient suffers is not serious,' is generally self-limited, has a tendency to be adversely affected by an emotional crisis, and responds well to the therapy about to be prescribed. The form of sedation, whether it be infrequent doses of phenobarbital or the daily administration of one of the newer euphoriants, is relatively immaterial. It is important, however, when such drugs are prescribed to be certain that they are available to the patient in restricted quantity for measured periods of time.

3. *Nutritional.* Because menstrual torments are usually worse in the asthenic, easily fatigued woman, one prone to be a capricious eater and liable to a mild degree of dietary anemia, it is important to prescribe a liberal, well-balanced diet. Hematinics should be included if an anemia is detected. Although iron, liver extract, and vitamins are not of themselves therapeutic in the control of menstrual distress, they do have an important role in the required regulation of the whole patient.

4. *Electrolyte Balance.* The postulate of Thorn and Emerson, stating that "premenstrual edema is probably the result of normal cyclic changes in sex hormone secretion acting on a precipitating factor in patients with some underlying change which predisposes to excessive retention of sodium chloride and water," has given rise to a method of therapy which attempts to relieve the various symptoms of menstrual distress by removing the "hidden edema" of the tissue involved[8]. Patients are requested to refrain from using all preparations containing the sodium ion, including table salt, during the premenstruum. During the same period of time, a diuretic to aid specifically the

excretion of the sodium ion is administered. For this purpose, one may use ammonium chloride in a divided dose of from three to four grams daily, from the twelfth day prior to the period until the flow begins. Other salts which can displace or withdraw sodium are equally effective. Thus, one may also use enteric coated tablets of ammonium nitrate in a dose of one gram three times daily during the premenstruum. Cation exchange resins may be valuable here in removing sodium from the gastrointestinal tract. Finally, a combination of bromotheophyllinate and pyrilamine, said by Bickers to be a specific diuretic for this condition[4], may prove to be effective.

This form of treatment is of most value in preventing premenstrual tension. It is fairly effective in alleviating cyclomastopathy, but has practically no effect on dysmenorrhea. To obtain the best results with this regimen, it is necessary to begin the course of ammonium chloride, ammonium nitrate, or other diuretic agents prior to the onset of the expected symptoms of menstrual distress. It is best to have the patient take at least three successive courses of this treatment, permitting her to repeat it thereafter following symptomatic recurrence.

5. *Control of Pain.* The two painful syndromes associated with menstrual distress are the cyclomastopathy and the primary dysmenorrhea.

It is admittedly difficult to select patients properly for treatment of cyclomastopathy. The predominant psychogenic element in many and the frequent spontaneous remissions in others reduce the validity of therapeutic claims for this condition. The electrolyte-regulating regimen outlined in the preceding paragraphs does relieve many patients with cyclic mammary pain. When it does not, several planned, periodic courses of orally administered androgen are recommended. Methyl testosterone in a daily dose of 30 mg. during the two weeks preceding menstruation prevents or alleviates the mastodynia. However, since the precise cause of the pain is unknown and not removed, the condition generally recurs within several months of the withdrawal of the medication. It may be repeated for, as in treatment of endometriosis with oral androgens, no untoward effects occur with such dosage.

Before prescribing therapy for mammary pain, the physician must examine the breasts completely, both when the patient is lying down and sitting up. It goes without saying, of course, that the type of mastalgia under discussion is that characterized by premenstrual pain and swelling without discernible organic change. In occasional patients, diffuse induration of the periphery of both breasts may be palpated, a nodosity which regresses following menstruation. It must be remembered that such breasts may also be the seat of benign or malignant adenomas, the finding of which, despite the cyclic mastodynia, requires immediate excision and histologic study.

The objective of treatment in primary dysmenorrhea is permanent freedom from pain without the further application of the pain-relieving drugs usually employed during an attack — the antispasmodics, the barbiturates, and the narcotics. This goal may, at present, be attained either by actually intercepting the nerve impulses of the uterus or by removing all factors which contribute to the hypersensitiveness of the autonomic nerves of the pelvis. The former includes the surgical forms of therapy, a subject not germane to this presentation. The latter, embracing the nonsurgical forms of treatment, has changed from time to time. Each of the many etiologic explanations of dysmenorrhea has in its heyday given rise to certain types of medical therapy for the pain, thereby accounting for the manifold remedies. It is important when initiating medical treatment to obtain the confidence of the patient by the promise of a painless period. The average patient with typical primary dysmenorrhea may be relieved of pain by the oral administration of estrogen during the first two-thirds of the menstrual cycle, a type of treatment which aims to suppress ovulation. An effective dose for this purpose is either 0.5 mg. of diethylstilbestrol or 1.25 mg. of conjugated estrogen taken twice daily for a period of twenty days, starting on the third day of menstruation. Such a course of therapy should be repeated for several months. When a pain-free period results following this treatment, the fixed expectancy of pain—the fear syndrome so characteristic of an immature personality—is abolished. This of itself is salutary.

SUMMARY AND CONCLUSIONS

Menstrual complaints are commonplace, accepted with resignation by many women, and require no treatment. However, major disturbances appearing cyclically before or during menstruation annoy a sufficient number of women to be tormenting. Several of these—essential dysmenorrhea, premenstrual tension, and cyclomastopathy, — have attained the stature of clinical syndromes. Their etiology remains obscure. A morphologic cause is rarely found, and it is difficult to accept a purely psychologic explanation for these disorders. In the absence of a definite etiology there can be no specific, no uniform, therapy. The recognition of the dual nature of such symptoms, endocrine and psychologic, and observation of their intoxication-like manifestations have led to some empiricism in management.

The therapeutic approach is designed to relieve the triad composing menstrual distress, namely, anxiety, symptoms secondary to water retention, and pain. Predicated upon a thorough physical examination which excludes the presence of organic disease of the genital organs and breasts, the treatment includes the following:

1. The airing of whatever psychologic factors can be demonstrated by merely listening to the patient, and encouraging her to an intelligent self-analysis of any stressful situation.

2. The use of a mild sedative, accompanied by frequent reassurances to the effect that many of the menstrual manifestations are self-limited, characterized by spontaneous remissions and recurrences.

3. The correction of all nutritional deficiencies.

4. The application of a regimen which counteracts the tendency toward edema during the premenstrual period, namely, ammonium chloride or nitrate, a salt-free diet, cation exchange resins, and the use of saline cathartics.

5. The intermittent oral administration of estrogen to prevent attacks of dysmenorrhea and of androgen to alleviate the pain of premenstrual mastodynia.

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Carcinoma of the Cervical Stump *

GEORGE ARCHER, M.D.
Greenville, Miss.

CARCINOMA OF THE cervix accounts for one-fourth of all the malignancies seen in the female and is a close second in frequency to carcinoma of the breast. In Mississippi alone for the year 1951 there were reported 134 cases of cancer of the cervix and an additional 126 cases of cancer of the uterus in which it was not specified whether the malignancy had its origin in the cervix or the fundus. This gives us an idea of the magnitude of the problem of cancer of the cervix.

While our results in treating early cases of cancer of the cervix are excellent, in more advanced cases they are most discouraging. It would appear then that, in our present stage of knowledge of cancer, our principal hope for improvement in handling cancer of the cervix lies in early diagnosis or even in prevention.

Let us suppose for a moment that we had a method whereby the present occurrence rate of cancer of the cervix could be lowered by as much as ten per cent. If we had such a method I am sure you would all agree that it deserved our most careful consideration and application whenever possible.

Now actually we do have such a method and it's available to all those of us who do pelvic surgery. That it isn't more universally employed in undoubtedly due to the fact that many surgeons are unaware of the large numbers of cancers seen in retained cervical stumps. In speaking of a cervical stump I refer to the cervix that is left in place at the completion of a supracervical hysterectomy.

No one can say what percentage of these cervical stumps, that are allowed to remain, will become malignant but we can approach the problem from another angle and determine what percentage of cancers of the cervix occur in women who have previously had a supracervical hysterectomy.

In our Tumor Clinic in Greenville we are now

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*Presented before the Section on Obstetrics and Gynecology of the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

seeing approximately 50 cases of cancer of the cervix a year and in seeing these patients we have been struck again and again by the fact that many of them have previously had a supracervical hysterectomy. For this reason I have personally reviewed our available case histories of cancer of the cervix and now have a series of 175 patients with cancer of the cervix. Of this group of 175 patients there were 19 or 10.8 per cent who had previously had a supracervical hysterectomy. In other words, there were 19 patients out of this series of 175 who would not have developed cancer of the cervix if their original operation had been a total rather than a subtotal hysterectomy.

We were so impressed by this large number of cases of cancer in cervical stumps that we felt it would be advisable to compare our findings with those of other tumor groups. I contacted Doctor Parsons and Doctor Street of Vicksburg and Doctor Bratley of the Central Tumor Clinic of Jackson and they were most cooperative in letting me have their figures on this subject.

Doctor Street's associate, Doctor Birchett, reported a series of 129 cases of cancer of the cervix with five of them occurring in the cervical stump.

Doctor Dick Street reported 54 cases of cancer of the cervix of which 7, that's 13 per cent, were of the cervical stump.

Doctor Parsons has 128 consecutive cases of cancer of the cervix with 15 or 11.7 per cent of them patients who had previously been subjected to supracervical hysterectomy.

From the Central Tumor Clinic of Jackson, for the four years 1948 through 1952, there were 190 cases of cancer of the cervix and 19 or 10 per cent were in cervical stumps.

If we sum up these figures from our Mississippi cancer clinics we have 676 cases of cancer of the cervix and 65 or 9.7 per cent of them occurring in cervical stumps. I am convinced that many of us do not yet realize the prevalence of cancer of the cervical stump. The performance of total rather than subtotal hysterectomies, as a routine procedure, would have prevented the development of cancer in these 65 patients. These figures I have just given you are proof that by using total hysterectomy rather than supracervical hysterectomy we can reduce our present occurrence rate of cancer of the cervix by 10 per cent.

Most of the patients I see who have a cervical stump do not even know that their cervix remains. I am sure the surgeons who did their supracervical hysterectomies told them that the cervix had been allowed to remain and could possibly give trouble at a later date. Certainly we should always give such patients this instruction, but it is very easy for the patient to become confused and feel that if the womb is out, it is all out. Not only is the average woman, who has had a supracervical hysterectomy, unaware that she has a cervix, but also it seems at times that she is less inclined to be alarmed by vaginal discharge than if she had not previously had pelvic surgery, possibly because she feels that the womb is out and can no longer cause any difficulty.

It has never seemed logical to us to remove the fundus of a uterus and leave the cervix when we know that 80 to 90 per cent of malignancies of the uterus occur in the cervix, so why should we remove the fundus and leave the portion of the uterus that presents the greater threat to life of the patient?

When we compare the risk of a supracervical hysterectomy with that of a total hysterectomy, it seems to us there is practically no difference in morbidity and mortality when the operation is performed by a competent surgeon.

I know you will all agree that it is far easier to do a total hysterectomy at the first operation than it is to go back in and remove a cervical stump that has been left behind.

It used to be said, as an argument for subtotal hysterectomy, that total abdominal hysterectomy shortened the vagina but this isn't true and actual measurements before and after surgery will prove that total abdominal hysterectomy, as done for benign conditions, does not shorten the vagina.

Now I do not mean to infer that one should never do a supracervical hysterectomy. There will be an occasional patient with dense adhesions in the cul-de-sac from an old pelvic inflammatory disease or endometriosis in whom dissection will be so difficult that it would be unwise to insist on doing a total hysterectomy. In these rare cases a supracervical hysterectomy, combined with adequate treatment of the cervix, will be the operation of choice, but there will be very few patients who will fall into this category.

The primary reason then for routinely employing total abdominal hysterectomy rather than supracervical hysterectomy is for the prevention of cancer of the cervical stump. However, there is another reason for routinely employing total hysterectomy. Out of our series of 175 patients with cancer of the cervix there were four for whom surgery was advised because of the presence of fibroid tumors of the uterus. Fortunately the operations employed were total hysterectomies because when the specimens were removed the pathologist found not only the fibroids, for which surgery had been advised, but also in each of these four cases an unsuspected carcinoma of the cervix. If subtotal hysterectomies had been performed on these four patients it is quite likely that their early cervical malignancies would have been totally overlooked at a stage when they were amenable to therapy.

There is one other point I would like to make though it does not apply strictly to cancer of the cervical stump. The more one sees of cancer of the cervix and fundus of the uterus, the more one is struck with the fact that a diagnostic D and C is not an infallible procedure in making the diagnosis of cancer of the uterus. If we have a woman of menopausal age who is bleeding irregularly from the uterus and we do a diagnostic D and C and don't find cancer, the chances are that she doesn't have a cancer of the uterus, but we can't be absolutely sure she doesn't have cancer, for no matter how thoroughly we perform a curettement it is still possible to overlook an early malignancy.

We have on several occasions had the experience of performing a diagnostic D and C and not finding cancer on the frozen sections, but on proceeding anyway with a total hysterectomy have a small cancer in the cervix or fundus of the uterus.

I had one woman in whom I am sure I missed the early diagnosis of cancer of the cervix because I did a diagnostic D and C, which showed no malignancy, yet she returned six months later with an advanced malignancy that must have been present when I first saw her.

We feel that if we have a woman in her late forties or over, who is bleeding irregularly, it is probably safer to go ahead with a total hysterectomy than it is to perform a D and C and then feel we have ruled out the possibility of malignancy. Certainly this is the better procedure unless the woman can be kept under very close observation.

IN SUMMARY

I have personally reviewed 175 cases of cancer of the cervix seen in our Tumor Clinic, most of them in the last five years, and find that 19 of these malignancies, or 10.8 per cent, occurred in cervical stumps.

Figures from Doctor Parsons' and Doctor Street's Tumor Clinics in Vicksburg and from the Central Tumor Clinic of Jackson also indicate that about 10 per cent of their cases of cancer of the cervix are occurring in cervical stumps.

Whenever a hysterectomy is to be done the operation of choice should be a total hysterectomy rather than a subtotal hysterectomy, primarily because in removing the cervix we are preventing the development of cancer of the cervical stump and in so doing we will reduce our present occurrence rate of cancer of the cervix by 10 per cent.

DISCUSSION

Dr. Richard Street (Vicksburg)—I would certainly like to compliment the essayist on presenting such an excellent paper on a very pertinent subject and one which we all feel is rather convincing to us that it is so important as to need very careful study when the problem does come up. Dr. Archer has brought out all the important findings as to the frequency of the occurrence of carcinoma of the cervical stump in several groups of reported cases, and has also mentioned the preference of a total hysterectomy to a subtotal, and has rather convincingly shown his reasons for same. There is one point which he has brought out that I would like very much to stress; namely, that of making a diagnosis of either irregular bleeding at the menopause or the cause of any postmenopausal bleeding. One frequently finds carcinoma of the cervix in a patient who may have also some other presumable cause for irregular or abnormal bleeding, and likewise one may find no cause for irregular bleeding in a diagnostic curettage or even a rather thorough biopsy of the cervix. It is these cases which make us realize that one cannot be too careful in evaluating irregular or prolonged bleeding, or postmenopausal bleeding in women who have this complaint either shortly before the menopause, or after same. However, I would prefer to have my diagnostic curettage and my diagnostic biopsy of the cervix to explain the irregular or prolonged bleeding, before I definitely felt that a hysterectomy was indicated. I certainly think that the essayist has presented an excellent discussion on the very pertinent subject.

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Acute Dilatation of the Stomach with Spontaneous Rupture—Report of Case*

JOHN S. BARR, M.D.
Belzoni, Miss.

INCIDENCE

FORTUNATELY, THIS highly lethal abdominal catastrophe is extremely rare. Mouchet and Tournebeuf[1], in 1946, were able to find only forty cases reported in medical literature. I was able to find six additional cases reported since that time [2,3,4,5,6], all in foreign literature.

ETIOLOGY

The cause of acute gastric dilatation followed by spontaneous gastric rupture is conjectural. Glassmon[7] wrote, as have virtually all others, that distention plays a primary role, but that the mere mechanical factor of distention is not enough. It would seem that mechanical or functional obstruction, both at the cardia and pylorus, are prerequisites of acute dilatation. It may also be assumed that distention produces venous congestion followed by ischemia followed in turn by cessation of nerve-ending function either due to neuronal nutritional embarrassment or to inability of the end organ to respond to nerve impulses.

Invariably, the distention follows the gluttonous ingestion of a fermentable food, e.g., sauerkraut, maize, beans, etc. This author postulates the following sequence of events: 1) A copious quantity of fermentable food is rapidly ingested; 2) food bulk, swallowed air, and fermentation cause a rapid increase in stomach size; 3) reflex cardiospasm and pylorospasm block the escape of stomach contents. (Vomiting is conspicuously absent as a symptom); 4) the blood, and subsequently, the nerve supply, to the stomach are curtailed; 5) the mucosa, muscularis and serosa "give away", in that order, at their weakest point, and rupture occurs, followed by peritonitis and pneumo-peritoneum.

SYMPTOMATOLOGY AND FINDINGS

The history is typical. A patient consults his physician one to four hours after the rapid eating of a large quantity of food, usually a rapidly fermentable food. He complains of upper left quadrant distention, severe pain, respiratory difficulty, nausea (but seldom any vomiting, especially after the first two or three hours) and prostration. If seen after gastric rupture occurs, the patient may be so prostrate as to be unable to give an intelligent history.

The physical findings vary with the stage of progression of the disease process. In the initial stages, before rupture occurs, one finds a patient restive from severe pain, who has a rapid pulse, a rigid distended upper left abdomen, a rapid respiration and other signs of impending shock. The usual doses of morphine may be quite ineffectual as pain relievers.

When rupture occurs, the condition of the patient rapidly deteriorates. The abdomen presents a marked generalized distention and rigidity with a drum-like tympany being demonstrable. The patient's skin is cold and clammy, the pulse weak and thready, the respiration shallow and rapid. Severe shock and impending demise are clearly evident.

The x-ray flat plate and upright plate of the abdomen are useful adjuncts to quick diagnosis.

TREATMENT

Only one reported case, that of Steinman[8], recovered. This occurred in a 17-year-old female who had eaten a large quantity of saurkraut. Her abdomen was opened soon after the onset of symptoms and a 3-inch rent in the posterior wall of the stomach was repaired. The author noted no pathologic changes in the edge of the tear.

It would seem that if seen prior to rupture the ideal treatment would be gastric suction, even though in the case to be reported, the rupture occurred after suction had been instituted.

If subsequent to rupture, the only logical treatment is immediate laparotomy, with the utilization of every available supportive measure. Monod-Bronca suggested peritoneal puncture for relief of the pneumo-peritoneum prior to laparotomy and shock treatment.

CASE HISTORY

A 49-year-old male, T. P., was admitted to the Humphreys County Memorial Hospital at 10:00 a.m. on April 23, 1952, by Dr. T. J. Barkley. The patient complained of severe pain in the left upper quadrant of the abdomen. This had begun about 7 hours previously and had followed the ingestion of a large quantity of pinto beans which the patient had prepared himself. There was some nausea, but no vomiting. The patient was restless and apprehensive.

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* Presented at the fifty-ninth annual meeting of the Delta Medical Society, Belzoni, April 8, 1953.

Physical examination at that time revealed a well developed, well nourished, middle aged negro male, restless and obviously in acute pain. The blood pressure was 160/100, pulse 90, respiration 28 and temperature 99. Head, neck, eyes, ears, nose, and throat were essentially normal. There was a definite systolic murmur heard best at the apex but audible over the entire precordium. The chest was clear and resonant. The left upper abdomen was distended, quite tender, tympanitic and rigid. The lower abdomen was normal. The genito-urinary system and extremities were normal.

The patient was given 1:2000 prostigmine, an enema, and continuous gastric suction was begun. A flat plate of the abdomen showed a ballooned stomach. His condition rapidly worsened, distention became generalized (about four hours after admission) and he was prepared for a laparotomy.

The abdomen was entered through a left rectus incision. Peritoneal puncture was followed by the loud efflux of sour gas. The peritoneal cavity contained a copious quantity of dark thick fluid undigested pinto beans, some of which were whole. There was a rent in the stomach extending on the anterior side in an oblique fashion from the cardia to the lesser curvature. The serosa and muscularis were pulled apart as though they had been wet blotting paper and the mucosa presented a perforation about 2 cms. in diameter.

The patient, who was in a state of profound shock, rallied somewhat at this time, and the stomach was closed with a continuous suture of catgut followed by interrupted figure of eight silk sutures. The abdomen was closed without drainage. Five and one half hours later, the patient expired, though he had receive dcontinuous shock-therapy, i.e. oxygen by tent, whole blood and respiratory stimulants.

CONCLUSIONS

1. Acute gastric dilatation with spontaneous rupture is a highly lethal and very rare abdominal disease.

2. In the reported cases, the history, physical findings, operative findings and ultimate outcome have been essentially the same.

3. Successful treatment will depend upon the earliest possible diagnosis which in turn will depend upon the bearing in mind that such a disease may occur.

4. A case of acute gastric dilatation with spontaneous rupture is here presented.

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Abdominal Pregnancy

(A CASE REPORT)

J. M. ALFORD, JR., M.D.
Greenwood, Miss.

This is the case report of a 26-year-old colored female who was admitted to the Greenwood Leflore Hospital on December 4, 1952, with the chief complaint of abdominal pain. She was gravida V, para IV, and 8 months pregnant. The pain had been present almost constantly for about 36 hours prior to admission and was located in the left lower abdomen.

During the first trimester of pregnancy, she experienced an episode of severe pain in the left lower abdomen which lasted one or two days and gradually disappeared. She had vaginal bleeding intermittently in the first five months of pregnancy.

Physical findings were a restless, colored female who appeared ill. Temperature 100.8, blood pressure 120/90, and pulse 96. Her abdomen was enlarged to the size of an eight- or nine-month pregnancy and was tender over the lower portion, especially on the left. The abdominal muscles were rigid. Fetal heart tones were 120 - 140 and the position of the fetus could not be felt. The cervix was soft but not dilated and the head was high and indefinite.

She complained constantly of pain and with the aid of consultation, a tentative diagnosis of premature separation of the placenta was made and a cesarean section was decided on. This was done 16 hours after admission.

Spinal anesthesia (18 mgm. pontocaine) was used and the abdomen opened by a lower midline incision. The fetal membrane was encountered and opened. This contained the fetus and a large amount of bloody fluid. After the fetus was delivered (and the surgical staff had recovered its collective composure), the abdomen was inspected and the placenta was adherent to the left tube and ovary, fundus of the uterus, and left adnexal region. A large portion of membrane and placenta could be removed without detaching it. The remaining portion was marsupialized and a large pack was put in the pouch to control bleeding. Abdomen was closed in layers with the pack out the lower part of the incision.

The patient received blood during surgery, and post-operatively did very well. The baby appeared normal, was weighed, and discharged in good condition. The pack was removed from the pouch on the fifth day. On follow ups at the office, the patient was anemic, but otherwise doing well.

Abdominal pregnancy occurs in about one in every fifteen thousand pregnancies. The fetal mortality in 130 cases reviewed by Beacham and Beacham was 85 per cent. Ware reported 250 cases from the literature since 1935. One hundred forty died in the abdomen, 50 within a few days after birth. The total fetal mortality was 75.6 per cent in that series. A large percentage of those that live are said to show congenital malformations. In another series of 236 collected cases, there were 60 per cent dead babies before operation and an additional 14 per cent infant mortality within 48 hours after surgery.

In reviewing individual case reports, it seems apparent that doctors are reporting mostly abdominal pregnancy with a live fetus and there may be an even greater percentage of infant mortality.

Diagnosis of this condition prior to surgery is missed more often than made.

In successful treatment of abdominal pregnancy, the question usually arises as to what is the best way to handle the placenta. This organ may be attached to one or several organs and areas of the abdomen. It usually has most of its attachment to the pelvic organs and on inspecting the pathology, appears to be quite a formidable problem. The fact is, from reading over the case reports, the placenta may be excised, left in situ or marsupialized, depending on the situation found at surgery. One thing is certain: Some cases will have the most severe hemorrhage you have ever seen, and for that reason, it may be wise to leave the placenta in situ.

The etiology of full-term abdominal pregnancy must be the same as that of ectopic pregnancy, which is unknown. However, there is commonly evidence of salpingitis in cases of ectopic pregnancy.

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DISCUSSION

Dr. Fred Hauser (Greenville)—Dr. Alford is to be commended on his most successful handling of this case of abdominal pregnancy—the result being a living mother and baby. The significance of this can be realized when we consider the fact that the fetal mortality is variously estimated between 75 to 85 per cent and the maternal mortality 15 to 25 per cent.

Primary abdominal pregnancy is exceedingly rare and is even doubted by some. Abdominal pregnancy is usually secondary to a primary tubal implantation which attaches itself to other viscera as the enlarging placenta spreads either through the tube or out through the fimbriated end.

The incidence of tubal pregnancies has increased in recent years, as a result of antibiotic therapy. The antibiotics have arrested cases of salpingitis resulting in more scarred tubes and less occluded tubes. Since most cases of abdominal pregnancy are secondary to tubal pregnancies we should expect an increased incidence of abdominal pregnancies.

As pointed out by Dr. Alford, the diagnosis of abdominal pregnancy is missed more often than made. A correct diagnosis and early treatment are of utmost importance. Abdominal pregnancies will not be recognized unless they are considered as a possibility in pregnant women with abnormal signs and symptoms. A history suggesting tubal rupture and abortion early in pregnancy, can often be obtained. Persisting abdominal pain and tenderness are frequently outstanding symptoms. Palpation of superficial fetal parts, unusually loud fetal heart tones, inability to palpate Braxton Hicks contractions, unorthodox false labor with inability to feel uterine contractions, and a high position or transverse fetal line are suggestive abdominal findings. Definite cervical displacement and a long and somewhat rigid cervix should lead one to consider the possibility of abdominal pregnancy. If a uterine mass can be palpated separate and apart from the fetus the diagnosis is almost certain.

X-ray examination is suggestive when the fetus is located abnormally high in the abdomen and in a transverse position, when the fetal parts are in view immediately beneath the abdominal wall, and when there is an absence of a uterine shadow surrounding the fetus. Frequently in addition to the above signs and symptoms there will be evidence of fetal death and missed abortion or missed labor.

In general the treatment for abdominal pregnancy is immediate surgery as soon as the diagnosis is made. Obviously three or four units of blood should be available in the event of massive hemorrhage. As Dr. Alford has pointed out, the question as to the proper way to handle the placenta has been a subject of much discussion. At the present time most authorities feel that the removal of the placenta should not be undertaken, the cord should be securely tied as close to the placenta as possible and the abdomen should be closed without drainage. In the event that the fetal sac is grossly infected drainage would be necessary. The improved maternal mortality rate has been due largely to the practice of leaving the placenta alone rather than attempting to remove it thus avoiding the serious complication of a massive and an almost uncontrollable hemorrhage.

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What Is a Man?

F. L. ROBERTS, M.D., *Assistant Dean*
University of Tennessee College of Medicine
Memphis, Tenn.

THE QUESTION, "What is a man?" may appear to many as rather trivial — because everyone knows what a man is — I am sure, however, that all of you would be hard pressed to formulate a definition. Hundreds of years ago Plotinus asked, "And we, who are we anyhow?" The question has never been answered satisfactorily. Certainly, I am not going to attempt an answer. I am merely going to pose some additional questions and review a few of the things which we think we know about man.

The term "man" is used in the generic sense and means both sexes. Therefore Kipling's definition of a woman as "a rag, a bone, and a hank of hair" is not considered sufficient—nor is some woman's definition of a man as "a jag, a drone and a tank of air" completely acceptable as a definition. A man may appear as one thing to his mother and yet be viewed in an entirely different light by his wife. To his son he is one person and quite another to his boss. So, all in all, we cannot depend upon a definition or a description of man given by those whose judgment might be colored by their emotions.

For a few moments I want to discuss some of the possible definitions of "What is a man." The first one that comes to mind is the chemical—man consists of so many grams of calcium, iron, phosphorus, carbon, hydrogen, etc. Chemically 76.2 per cent of weight is composed of H and O, 17.5 per cent is formed by carbon, 2.4 per cent by nitrogen, and 1.6 per cent calcium, and 1 per cent by phosphorus — the other 1.3 per cent of the total weight is made up by Na, K, Fe, etc. These accurate analyses have been made of the human body—but all of them fail to define a man—in this sense the whole is greater than the sum of its parts—because no matter how carefully you may put together all of the elements of a man—you still won't have one. There is one intangible factor which is always missing in our synthesis, and that is life. It would appear that chemical and physical factors are used by life but they do not make it. And I do not believe that it is possible to synthesize life. Even in lifeless physics—the so-called "field", a space traversed by lines of force, appears as a whole—that is, it is not put together or composed of its separate parts, the electrons, but is the very condition for the existence of these parts. The field is nothing but space, but without it there could be no electrons.

Then there is the anthropological definition—and by this I do not mean the cynical definition that man is an upright biped with a backache. I mean that definition that man is an individual (genus homo, family Hominidae, class, mammalia) of the highest type of animal existing or known to have existed, differing from other high types of animals especially in his extraordinary mental development. For most people this is not a completely satisfactory definition—because most of us feel that there is something more than is expressed in the definition quoted.

There is another way to attack the problem and that is an analysis of how man differs from other mammals. Just how *does* he differ? Anatole France said that lying and literature separate man from other animals—that man is the only animal that tells lies and writes books. To say the least, this is a rather cynical definition. It is true that in all localities men have lied and some have written books. But there have been truthful men—albeit very few in number and widely divided historically. So we cannot wholeheartedly accept Anatole's distinction.

The theologians say that it is the presence of a soul that distinguishes man from other animals. This may be true, but I can not embark on a theological discussion, because not all religions or philosophies agree as to what constitutes the soul. Let us limit this discussion to what we can observe.

There is one very important difference between man and other higher primates and that is the possession of opposable thumbs. To many of you this may appear an insignificant difference, yet it is what allows man to use tools of precision. A monkey can use certain tools, such as a stick with which to reach a banana, but he cannot readily wind a watch. It is the opposable thumb that enables man to use tweezers and other types of tools which are beyond the ability of even the highest primates, and it is the ability to use these tools that has given man his supremacy over other animals. He is not as strong as the lion but his bow and arrow, his spear, or his rifle act as equalizers. Man is able to build traps for his fellow man as well as other animals. He can build houses and construct heating equipment. He can control, to a certain extent, fire. All of these things are possible because of the simple fact that he has opposable thumbs. It is said that we should never underestimate the power of a woman, and just so we should not underestimate the importance of opposable thumbs. Without these thumbs the highest intelligence would be of no practical value whatever.

Another distinguishing factor between man and other mammals is laughter. Despite the name, hyenas do not laugh. Laughter is the gift of man alone. Here is another apparently simple fact: men laugh, but no one has ever been able to explain in a completely satisfactory manner why men laugh.

One philosopher said that it is the antidote for knowledge of death. So far as we know man is the only animal possessing the knowledge of the inevitability of death. In some ways this is salutary knowledge, but in other ways it leads to a great deal of fear and grief. But whether this knowledge is good or ill, the fact remains that man has it—and it might be that laughter is the antidote.

Hobbes, the English philosopher, said that we laugh at deformities and awkwardness, that it heightens our self-esteem, we are better than the deformed and are above the awkward situations. Hobbes says that laughter comes of "a sudden feeling of glory." Now most civilized men do not laugh at deformity, but children do. And slowns are often made up to look deformed or are actually dwarfs or crippled, and people laugh at them. And all of us laugh at people in awkward situations. If a man walking along the street should have his trousers drop around his feet, the spectators would laugh. A comedian trips over his feet and falls flat on his face, arousing laughter. Any of us can think of many awkward situations which arouse our laughter, just as long as *we* are not in the situation ourselves.

Schopenhauer says that laughter results from the apprehension of an incongruity. There is an old, old story of a drunk person in the back of a church when the preacher repeats for the third time "and on that day, who will be the sheep and who will be the goats", the drunk gets up and says, "Go ahead with the game, preacher, I'll be the goat." There are hundreds of other incongruous situations that arouse laughter.

The French philosopher, Bergson, said that laughter is a social phenomenon—that a man does not often laugh when by himself, but society uses it to curtail antisocial acts. All of us know what a terrible weapon laughter is against bigotry and tyranny.

Whatever laughter is—why men laugh—is not so important as is the fact that it is the gift to man alone and sets him off from other mammals.

We still hear the mechanistic theory that man is nothing but a mechanism, a sort of glorified engine. The modern calculating machines are called "mechanical brains." Now, we do not know how the brain forms an idea or gets a concept, but there is one great and fundamental difference between the brain and a computing machine. The machine does not originate an idea, the data that are fed into it had their origin in a human brain. It is true that the machine can remember data, can react to various stimuli but it cannot formulate an idea.

So far as basic mechanisms are concerned, a man is no better than a worm because the worm, like man, exhibits the basic requirements of living organisms. It maintains its form against distorting forces, it utilizes material in its environment for purposes of nutrition, it has ordered connection of all metabolic processes and it can move from place to place.

But man can do something that sets him apart from *all* other animals—he is able to transmit ideas and experience to his yet unborn descendants. He is able to put some marks on a stone or a clay tablet or paper, and by means of these marks he can convey an idea to another person whom he has never seen and may never see. All animals apparently are able to abstract some part of knowledge from their experience. The rabbit who hides in a thicket to escape the hunter has abstracted the essential factors from his environment and has made a decision. But animals can not communicate by means of symbols and whatever communication they have is probably instinctive and certainly immediate.

Few realize what a tremendous advance man made when he first communicated an idea by a symbol. No one knows how or where writing started, but it is very ancient and apparently started in different places at about the same time. It has not advanced consistently, since in areas with advanced writing there are still those groups who use very primitive methods of writing. Probably writing began by someone making a mark on his possessions in order to identify them. Primitive man also drew pictures of what he saw, the earliest writings being pictorgraphs, a man was represented as a man and later these symbols became conventionalized. But predating pictorgraphy was inconography, which was static; that is, the symbols do not represent words in discourse, definite ideas following one another, but simply pictures of familiar objects. It was relatively late in the history of writing that phonetic writing, that is writing where letters or symbols represent sounds, was developed. It was a long cry from a picture representing a man to the three letters, M A N, which have no resemblance at all to a man.

Regardless of all the theories of the development of the alphabet the fact is that man alone of all the animals is the only one which can write, the only one who can communicate with his distant fellowmen, distant in both space and time. Man is the only animal who can by means of symbols hand down to his descendants the accumulated knowledge and experience of the race.

Some people have thought that the invention of writing was not an unmixed blessing, but for that matter, neither is the radio, the television, or the splitting of atoms.

We often marvel at how insignificant man appears against the vastness of the universe, but in one way at least he is not so insignificant. Protozoa and bacteria have about 10^{10} to 10^{14} atoms in their bodies. Man, higher animals and larger plants have 10^{26} to 10^{28} atoms. The visible universe contains about 10^{78} atoms. Thus man occupies a position about half way between bacteria and the known universe — because by doubling the exponent of the number of atoms in a man's body you will get 10^{56}—which would include the greater part of the visible universe.

Perhaps man can never know reality. He may be like the dweller in Plato's cave, able only to see the shadows of the real world as they are shown on the wall before him. Puny and insignificant in size as compared to the universe, cowardly and courageous by turn, the most ferocious of all animals, absolutely ignorant of the basic causes of phenomena, it is amazing how he has defied an apparently indifferent universe. It is amazing how much he has accomplished in wrestling secrets from nature.

So as we come to the end of this inquiry we ask again, "What is a man?" The direct answer cannot be given, but we can say that he (or she) is more than the sum of his parts; he is more than a collection of water and minerals in a skin container; he is more than a mechanism. Just what it is that has been added is more than "life" because all plants and animals have that. Man is set off from all other animals in several ways: he has opposable thumbs enabling him to use tools with precision, he has the gift of laughter, but above all he is able to communicate ideas by means of symbols. It is easy to list the ways in which man differs from other animals but it is impossible for one to define a man. We cannot answer the question "What is a man?"

Genito-Urinary Tuberculosis*

BEN R. RADER, M.D.
Clarksdale, Mississippi

Many decades have passed since Sir William Osler used the term "captain of the men of death" to characterize pulmonary tuberculosis; and in his day this term very adequately described the then prevalent scourge of mankind. The march of time has changed this dismal outlook of yesterday until we now can look upon this same "captain of the men of death" as one who has been markedly demoted.

Today we find scattered throughout all parts of the world many well-managed and scientifically staffed sanatoria established for the treatment of the patient suffering from pulmonary tuberculosis and in these various sanatoria a well organized program of treatment is carried out; however, very few of these same institutions are equipped to cope with the problems of tuberculosis of the urinary tract. The patient with renal tuberculosis is, as a rule, ambulatory; and this creates an unfortunate problem from the standpoint of public health. This type of patient seldom has even a slight elevation of temperature and takes an active part in society without being aware of the fact that he is a great disseminator of disease.

Approximately eighty per cent of the cases of urinary tract tuberculosis occur in persons between the ages of 20 to 40. Sex predilection does not play a part, male and female alike being attacked. Throughout the country today an unknown number of patients suffering from chronic bilateral renal tuberculosis are mingling freely with their fellowmen. They are using public rest rooms, sending their soiled clothes to public laundaries. They ride public conveyances and spread contamination on door handles and various other places. We, as physicians, must not lose sight of the fact that carriers such as these are voiding urine which is laden with tubercle bacilli and constitute a constant menace to public health. Urologists are generally cognizant of these facts, but outside of this group there is hardly a protest raised against this menace.

Let us analyze momentarily the more practical and sociological aspects of the above statements. The unfortunate renal tuberculosis victim faces a grave and dim outlook from the standpoint of rearing his family and building up an average financial security. We have stated that eighty per cent of cases of urinary tuberculosis occur between the ages of 20 and 40, and these happen to be the years of greatest accomplishment in our lives.

Some of these patients, if discovered in time, can be helped. According to leading authorities eighty per cent of patients who have unilateral renal involvement at the beginning make up the so-called surgical tuberculosis group. We say surgical here because by doing a nephrectomy or amputating the diseased kidney the progress of the disease may be arrested and hopes held for the establishment of permanent cure. All of this is not as easy and as simple as it may sound; however, many cures still are affected by surgery.

The remaining fifteen per cent make up the group with bilateral involvement. It is these patients who present the more severe and pathetic problems. They should be institutionalized or at least in most cases. These patients are usually condemned to the life of an invalid while they live a handicapped life; yet life expectancy is often remarkably prolonged. It is an old saying as well as a belief that spontaneous healing never occurred in these cases, but today we can note with a great deal of interest the statements of a few urologists who claim they have seen quite a few of undoubted instances of healing in bilateral cases. Such cases are unfortunately an exception and not the rule.

With the advent of antibodies we are witnessing a decrease in surgical tuberculosis of the kidney. This is, of course, due to earlier diagnosis and to improved treatment of pulmonary disease.

Symptoms and Clinical Featuress Genito-urinary tuberculosis is not the result of primary infection. It is an extension from some other focus. The patient usually comes to the doctor with complaints involving the urinary tract. Most authors state the cardinal symptons of renal tuberculosis as follows: 1) bladder irritability, 2) hematuria, 3) dysuria.

Under bladder irritability we find the most predominant and outstanding symptoms of renal tuberculosis occurring in eighty per cent or more of the cases, and it is the initial symptom in sixty to seventy per cent of the cases. This is brought about because of the production of toxic products which become irritating to the bladder. These symptoms of irritation are far less severe than those caused by urinary bladder ulceration. In occasional instances the urgency may become so intense that an actual incontinence may occur.

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*Presented before the Section on Obstetrics and Gynecology at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

In the most advanced stage there is an incessant, intense desire to void. This constant, teasing desire to urinate is often the sole symptom which brings the patient to the doctor. They give a history of many months of urinary distress coupled with a slight loss of weight and appetite, as well as nervousness, apprehension and mild impairment of mental concentration, fatigue, and malaise. This type of patient is too often dismissed with a tonic or a vitamin prescription and unjustly labeled as an emotionally unstabilized individual.

Some few patients may present no symptoms other than a mild persistent pyuria. They may appear very tired and relaxed. With a picture of this type it is often too easy to treat for a mild cystitis and classify the patient as being just a little on the lazy side of life.

When the doctor discovers nothing more than pyuria and if this is accompanied by the previously mentioned vague symptoms, he should rule out renal tuberculosis by a diligent urological check-up. We must never lose sight of the fact that tuberculosis is very much like syphilis in that it is a great imitator of nervous diseases.

An undiagnosed case of unilateral tuberculosis will involve the other kidney and become bilateral within a period of two to five years. The problem then becomes surgical.

Hematuria has been mentioned as one of the cardinal symptoms; however, we are of the opinion that entirely too much stress has been placed on this finding as a symptom of renal tuberculosis. Some authors state that twenty per cent of all cases of gross hematuria are caused by renal tuberculosis. We still hold that nephritis is the most common cause of renal hematuria. It is true that in a very few cases, perhaps five per cent, gross renal hematuria may be the initial symptom of urinary tract tuberculosis. Other causes of hematuria must be ruled out such as neoplasms, calculi and certain blood dyscrasias. The hematuria due to tuberculosis is seldom as massive as that caused by malignancy. Massive hemorrhage will more than likely occur early if it is to occur at all in renal tuberculosis, and this hemorrhage is precipitated by erosion of the blood vessels in the apices of the pyramids. This is understandable when we consider the fact that renal tuberculosis begins in the pyramids.

Pain is an important initial symptom and is far more frequent than hematuria. It is of a dull aching type and renal colic is rare. The pain may at times be referred to the opposite or healthy kidney because of compensatory hypertrophy and capsule stretching due to congestion.

Certain other symptoms may occur such as palpable enlargement of the kidney, in about one third of the cases. In some other cases a thickened ureter may be felt through the rectal or vaginal walls.

Diagnosis of Renal Tuberculosis: Once the kidney pelvis is involved, diagnosis is not so difficult; however, when the disease is confined to the parenchyma, its presence is seldom suspected. In chronic cases showing a presence of ureteral infection the tuberculosis factor may be overshadowed.

In the greater portion of clinical cases, bladder invasion has already occurred and in the advanced cases perhaps the greatest difficulty lies in localizing the diseased foci instead of determining that the patient has tuberculosis.

To emphasize the importance of a good history and physical examination may sound just a bit on the trite side, but we cannot overlook their prime importance in diagnosis. To us, it seems tht these two ultra important aids are today being pushed aside in favor of countless precision tests, which unquestionably accupy an inportant place in the diagnostic field. They should be used in conjunction with and not as an absolute replacement for our five senses.

A carefully obtained and well studied history offers an excellent blueprint outlining the methods of attacking the problem confronting us, pointing out the most likely precision tests necessary to answer our questions and thus save the patient time and unnecessary expense. It will be wise to emphasize that renal tuberculosis can never be diagnosed from the history alone. This is especially true in women since in the case of females, there are many other causes to account for bladder disturbances.

The average patient's history will be about as follows: The most common symptom will be frequent and painful urination. The term dysuria includes tenesmus. With complaints of this type it is wise to inquire as to how much time has elapsed since the onset and was the onset slow and insidious. As a general rule it will be found that the onset was approximately six months previous to the examination. The patient will tell you that at first there was a frequency of perhaps once or twice a night with not enough daytime frequency to be annoying. Gradually the nocturia became markedly pronounced until the patient complains of having to get up almost every hour during the night and with increasing discomfort to evacuate the bladder. There is also a noticeable increase in the daytime frequency. This picture of a patient with urinary distress as the main feature will be found in seventy-five to eighty per cent of patients. In the remaining twenty to twenty-five per cent of the complaints may vary widely and often present definite diagnostic problems. Following the history a well-organized routine examination should be done looking for everything and trying to miss nothing. Following the recording of findings, laboratory and x-ray examinations are made. An x-ray study of the lungs is all important and in some cases with stereoscopic films which may present evidence of a primary tuberculous focus.

Routine blood studies are to be done; however, at this stage chemical analysis and sedimentation rates are not important and may be delayed until later. A urinalysis should be done. In a subacute or chronic case of renal tuberculosis the specific gravity is very often low, and the urine presents a characteristic pale, lemon yellow color with a slight turbidity resembling lemonade. The number of pus cells per cubic millimeter should be noted, and it is well to remember the failure to find pus cells does not exclude tuberculosis of the urinary tract.

It is often difficult to find acid-fast bacilli in the urine, because the nature of the kidney lesion is such that only occasionally are bacteria spilled into the urine.

When tubercle bacilli are demonstrated in the bladder urine, an exacting search must be made to locate the lesion's site in the genito-urinary tract in the male and in the urinary tract in the female.

An intravenous pyelogram should be done; and at times this type of urography may yield some important facts, but reliance must not be placed upon this procedure for a final diagnosis.

The cystoscopic examination should come next in order, and such an examination may reveal the classic tuberculosis lesions of the bladder. At times it is rather odd to see lesions around the normal appearing ureteral orifice. This curious finding is due to the streams of urine impinging on each other when the ureteral orifices are so situated in the trigone that they happen to point towards each other with the discharge from the infected kidney and ureter being throw to the uninfected side producing a misleading implantation.

The affected side of the bladder wall will show splinting and straightening. The classic golf hole ureteral orifice when present is very significant. The ureter when infected becomes thickened in its transverse diameter, pulling the ureteral orifice out of the bladder leaving the golf hole appearance.

If ureteral catheters are passed, they should be passed with due caution. The catheter being connected to the irrigator by means of a hypodermic needle allowing a continuous flow of sterile water from the catheter tip when passing into and along the ureter. This procedure may effectively prevent the spread of infection from the bladder to the uninfected kidney. Ureteral strictures may be encountered preventing the passage of any catheter regardless of size.

When catheters are passed, urine is collected in separate containers from each kidney; and a complete urinalysis is done.

The indigo carmine or intravenous dye test should be done to obtain information as to kidney function. Some urologists strongly object to passing ureteral catheters in tuberculous patients, and their objections in a good many instances can well be sustained.

Pyelography: Intravenous urograms are of importance in suspected cases of renal tuberculosis, while such procedure may not correlate the degree of tuberculosis present in a kidney with its function as estimated by excretory urography. A kidney which is extensively involved shows a marked reduction in the ability to excrete the contrast medium. This fact is brought out when one considers our present methods of diagnosis as being relatively accurate and with the majority of patients seeking medical help fairly soon after the onset of symptoms. Yet the most common finding encountered in the excretory pyelogram in cases of renal tuberculosis is an absence of visualization with a delay in the appearance time of the dye. These findings coupled with other clinical data as the demonstration of tubercle bacilli in the voided urine are sufficient for diagnosis. The tubercle bacilli may be demonstrated in approximately seventy-five per cent of the cases by means of acidfast stain of voided urine sediment. The excretory urogram is of marked value in locating the bad kidney.

Treatment: In treating renal tuberculosis or genito-urinary tuberculosis in general both medical and surgical care must be considered. To make a decision as to the proper course of treatment in each case requires foresight and outstanding knowledge of the pathological condition with which we are dealing.

Attention must be directed to the fact that renal tuberculosis is not directed to one organ, and the patient cannot always be assured of a cure because of the removal of one kidney. Today it is recognized that these patients require rest and treatment before and after surgery and such care is best conducted in a sanatorium. This care is of paramount importance when we consider that renal tuberculosis is a slowly progressive disease, and cure depends in part in developing a resistance to the infection. Surgery is contraindicated in patients who show a poor resistance during the preoperative period.

Living as we do in the golden age of antibiotics with the advent of streptomycin, we have witnessed considerable changes in our ideas concerning the treatment of renal tuberculosis. This antibiotic has been found to produce an outstanding effect upon the early tubercular lesions. Perhaps in the future, streptomycin may find its greatest use in bilateral tuberculosis and in the healing of small lesions in the calyces and pelvis of the so-called sound kidney. Since tubercle bacilli soon develop a resistance to streptomycin, it is good therapy to administer para-aminosalicylic acid concurrently with the streptomycin.

Calcification in the tuberculous kidney is not too common, and some authors raise the question as to whether nephrectomy is advisable when this condition is present. While it is well established that calcification represents the end stage of tuberculous healing, kidneys showing mild calcification often contain active disease.

When is nephrectomy indicated? We are of the opinion that nephrectomy may be done in patients with unilateral renal tuberculosis provided the disease may be demonstrated by pyelogram. In certain cases of bilateral infection, one kidney may be removed, although the remaining kidney may also harbor infection. Should the condition be advanced and present intolerable symptoms, skin ureterostomy may be justifiable as a measure of relief. This same procedure may at times prove helpful in advanced bilateral cases since it may give added years to their lives by slowing renal destruction rate.

The Role of Isoniazid in Treatment of Genito-Urinary Tuberculosis: This drug is as yet a mere therapeutic infant and as such is not old enough for a practical clinical evaluation.

The committee on therapy of the American Trudeau Society has collected some excellent reports of toxic reactions of isoniazid. These data emphasize the frequency of central nervous system effects, some leading to acute psychoses. These reactions are more frequent in patients who have shown previous cerebral disease and idiopathic epilepsy. Recent experimental evidence has shown that such undesirable reaction may be prevented by the concurrent use of phenobarbital.

Dosage should first be determined by testing the sensitivity of the patient's tubercle bacilli to the drug, and it should then be given daily, three milligrams per kilogram of body weight in two daily doses and a blood level of one to two milligrams per cc. is adequate for the average patient.

Resistance to the drug may develop after two to eight weeks' treatment. When kidney excretion is impaired, the drug accumulates in the blood; and at high levels may produce convulsive symptoms, however, it is non-nephrotoxic.

Nephrectomy still remains the treatment of choice in unilateral renal tuberculosis presenting large fibrous, necrotic lesions. Perhaps certain small lesions involving renal calyces or pelvis may be healed with streptomycin, para-aminosalicylic acid or isoniazid.

Tuberculous Bladder Treatment: The tuberculous bladder is a very irritable bladder, and its successful control will present many perplexing problems to the physician. Several years ago a European surgeon suggested the use of one to two per cent phenol solution as an instillation into the bladder. This treatment still possesses merits especially when ten cc. of one per cent diothane solution are instilled into the bladder before using the phenol. The tuberculous bladder does not tolerate any solution very well including urine, the mucosa being extremely sensitive; and because of this, local treatment in general is usually unsatisfactory. The removal of the focus of infection is still the key to the most successful treatment of urinary bladder tuberculosis. Since this focus is usually found in the kidney, nephrectomy generally is indicated. In cases of unilateral renal tuberculosis, the bladder lesions will often heal with a dramatic relief of bladder irritability and cystitis following the nephrectomy.

In Conclusion. In the presenting of this paper an attempt has been made to point out the fact that patients suffering from renal tuberculosis and genital tuberculosis in general constitute a public health problem since they must be classified as disseminators of the disease.

In discussing treatment of genito-urinary tuberculosis we must not lean too far forward in our enthusiasm for the antibiotics. Unquestionably these drugs are destined to play an important part in the future treatment of genito-urinary tuberculosis; however, we must not lose sight of the fact that nephrectomy is still the treatment of choice in selected unilateral tuberculosis cases where the lesions are of the fibrocaseating type and patients who have had ample preliminary studies while under sanatorium care. To this we must add the occasional case where the condition is bilateral and medical treatment has been used. The patient may through surgery be spared marked suffering and perhaps some prolongation of life.

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Physiological Compensations Following Acute Cardiac Failure*

ARTHUR C. GUYTON, M.D.
University, Mississippi

DURING THE past four years several hundred experiments have been performed in this laboratory on dogs for the purpose of clarifying the pathological physiology of acute cardiac failure. Much of this work has been reported in experimental detail, [1-5] and it comprises experiments of the following variety: 1) heart-lung experiments, 2) coronary occlusions, 3) obstruction of venous return to the heart through a special system inserted by cannulation between the great veins and the right auricle, 4) obstruction of venous return to the heart by inflating a balloon in the right auricle, 5) obstruction of venous return to the heart by continuous positive pressure respiration, 6) weakening the heart by fibrillating it for varying intervals of time and then defibrillating it, 7) obstruction of the aorta or the pulmonary artery, 8) weakening the heart by excessive heating due to strong electrical current passing through the myocardium, and 9) rapid, massive transfusions of blood equivalent to as much as 9 liters administered to a human being. These experiments have been designed not merely as laboratory exercises but with an eye to their clinical usefulness. Therefore, the present report is a synopsis of the results as they apply to the clinical condition of acute cardiac failure.

A. Immediate Physiological Changes in the Circulation Following Acute Myocardial Failure:

Immediately following damage to the myocardium, the effects which take place depend on the portion of the heart that is damaged—particularly on whether the part damaged is the left ventricle or the right ventricle.

In left ventricular damage, without concurrent right ventricular damage, the pumping power of the left heart is greatly decreased while the pumping power of the right heart, at least theoretically, is unimpaired. Therefore, there is a tendency for the right heart to continue pumping large quantities of blood into the lungs while it is difficult for the left heart to pump that blood on into the systemic arteries. Therefore, blood is dammed in the lungs, and the consequence of pure left-sided heart failure, whether it be acute or chronic, is *pulmonary congestion.*

In many patients with acute left heart failure, the quantity of blood that is dammed in the pulmonary system may be as much as 500 to 1000 cc. Consequently, the quantity of blood that is suddenly removed from the peripheral circulatory

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*From the Department of Physiology and Biophysics, School of Medicine, University of Mississippi, University, Mississippi.

This investigation was supported by a research grant from the National Heart Institute, of the National Institutes of Health, Public Health Service.

system by this collection of blood in the lungs is the same amount. Therefore, some patients with pure left-sided heart failure may actually have decreased venous pressure in the peripheral veins rather than increased peripheral venous pressure. This appears to be a paradox, for an elevated peripheral venous pressure is believed by many physicians to be an accompaniment of all types of heart failure.

If acute left heart failure occurs without concomitant right heart failure, the right heart can still pump the normal quantity of blood into the lungs, and the left heart, even though it is failing, must pump this blood on into the systemic arteries. In other words, the term failure does not mean that the left heart cannot pump normal quantities of blood but simply means that it cannot pump this blood without the pulmonary venous pressure rising to abnormal levels. Consequently, in a few patients with acute left heart failure, the cardiac output remains normal, and the only abnormality is the elevated pulmonary venous pressure with resultant pulmonary congestion.

Most of the time, however, acute left-sided failure of the heart causes decreased cardiac output as well as pulmonary congestion. This appears to occur partly as the result of blood shift from the peripheral circulatory system into the pulmonary system. When large quantities of blood are dammed in the lungs, the decreased volume of blood in the peripheral circulatory system makes it difficult for normal quantities of blood to return from the peripheral vessels to the heart. This, obviously, decreases the output of the heart. A second and more prominent cause of decreased cardiac output in acute left-sided failure is overload of the right ventricle. When large quantities of blood are dammed in the lungs, all of the pressures in the lungs are greatly increased, including the pulmonary arterial pressure. If the congestion of the lungs is severe enough, and the pulmonary arterial pressure rises high enough, the right heart fails under the extra load. This results in decreased cardiac output. Indeed, such failure of the right heart along with and as a consequence of left heart failure is a very common occurrence.

When the right heart fails at the same time that the left heart fails, the pulmonary congestion resulting from the left heart failure is considerably reduced. The reason for this is that, even though the left heart is tending to dam blood in the lungs, the right heart is not pumping as much blood into the left heart as normally. As a corollary, it is obvious that when the two sides of the heart fail simultaneously there is not as much shift of fluid from the peripheral circulatory system into the lungs as occurs when only left heart failure is present. Finally, when the two sides fail simultaneously, the decrease in peripheral venous pressure, which occurs sometimes in pure, acute left-sided failure, is not present, and, indeed, the peripheral venous pressure may actually be increased because the right heart, by its own failure, is damming blood in the peripheral system.

When it is only the right heart that fails, there occurs damming of blood in the peripheral circulatory system but not in the pulmonary system. Therefore, no symptoms of pulmonary congestion occur, but the failure to pump blood satisfactorily out of the systemic veins causes an elevation of systemic venous pressure with resultant peripheral congestive symptoms. However, much more important than the peripheral congestive symptoms is the marked diminishment of venous return to the heart when the venous blood is dammed in the peripheral circulatory system. Consequently, *acute failure of the right heart greatly decreases the cardiac output.*

It can be seen from the above discussion that left heart failure can cause damming of blood in the peripheral venous system by overloading the right heart and thereby causing right heart failure. On the other hand, direct damage to the right heart can do the same thing. Consequently, damage to either ventricle of the heart can cause right heart failure with the usual symptoms of elevated peripheral venous pressure and diminished cardiac output. However, acute failure of the heart, regardless of the type of lesion responsible for the failure, never causes the peripheral venous pressure to rise immediately to a level greater than 4 to 5 mm. of mercury.[3,4,6-9] This level is several times less than the very high venous pressures often recorded in late congestive failure of the heart.[9] Even when blood flow through the heart is completely occluded, such as occurs during cardiac fibrillation, venous pressure rises to a maximum of approximately 10 to 12 mm. of mercury, which is still far less than the venous pressures of late congestive failure.[4] Therefore, it seems obvious that the very high venous pressures of congestive heart failure are not due solely to the damming up of blood in the venous circulation by the failing myocardium, but also, to factors which occur in the later stages of circulatory compensation.[10], [11]

B. The Course of Recovery from Acute Myocardial Damage:

Recovery from acute myocardial damage comes about by recovery of the lesion itself and, secondly, by physiological compensatory changes in the circulatory system which allow normal or almost normal circulation to be re-established even though the heart may be permanently weakened.

In the case of myocardial infarct, it is well known that much of the deactivated muscle is not actually killed, and as soon as sufficient collateral circulation is established this muscle becomes once again normal or almost normal. The development of this collateral circulation begins immediately after the infarct occurs, and it continues for many months.

Hypertrophy of the uninvolved cardiac muscle is, of course, one of the major compensatory mechanisms to offset the effects of permanently damaged myocardium, and experimentally the same laws as does the process of work hypertrophy in skeletal muscle,[12] and it takes several months or more for this to take place.

There is also a very important physiological compensation which occurs following acute myocardial failure, namely, readjustment of fluids in the body. It is this compensation with which this paper is particularly concerned because of the many prevalent misconceptions regarding it and because the present experiments have helped to clarify the issues.

When the heart is severely damaged to the extent that cardiac output is acutely decreased, begins immediately a process of hemodilution with resulting increase in the blood volume. Because of the association of large blood volume with the severe symptoms of late congestive failure, many clinicians have believed for a long time that increase in blood volume is harmful and that administration of fluids should be avoided.[13] Yet, evidence has been amassed to show that blood volume increase is beneficial in many patients rather than harmful for the following reasons:

Going back forty years to the studies of Starling and his associates, it was even then noted on heart-lung preparations that as the heart becomes weakened, increasing the venous pressure up to a certain limit by adding larger quantities of blood to the reservoir can cause the heart, though in a weakened condition, to pump normal quantities of blood at normal pressures. In other words, within very wide limits, a heart that is primed with venous blood under elevated pressure, whether that heart be normal or weakened, will have a greater cardiac output than will a heart primed with less venous pressure, and in order for the weakened heart to give normal cardiac output higher venous pressure is necessary than for a normal heart. This basic principle has been shown to be true over and over again in intact animals as well as in heart-lung preparations.[14]-[18] Therefore, it bears repeating once again in still different words: Within limits, even a greatly weakened heart can often have a normal cardiac output provided that the input venous pressure rises first to a sufficiently high level.

Within a week after acute failure of the heart the blood volume increases very significantly[19] and may continue to increase for a period of several more weeks. It is during this same interval of time that the cardiac output returns toward normal, and it is reasonable to believe, from the above physiological considerations, that much of the improvement occurs as a result of this increasing blood volume.

The question still must be answered: What causes the increase in blood volume? The answer to this appears to be three-fold: first, there is a rebalancing of fluids in the different body fluid compartments; second, there is a very marked retention of fluid by the kidneys; and, third, there occurs a progressive increase in the quantity of red blood cells.

Even though the venous pressure often rises a few mm. of mercury immediately after a heart fails to pump normal quantities of blood, there is evidence that this rise in venous pressure is not accompanied by a rise in capillary pressure.[3],[4] The reason for this becomes obvious after a little thought. The rise in venous pressure is caused by damming of blood in the peripheral venous system. Therefore, there occurs a decrease in venous input to the heart and a like decrease in the cardiac output. If the cardiac output is decreased, with no change in peripheral resistance occurring, the arterial blood pressure falls, and this, from experimental evidence obtained in this laboratory, appears to be more than enough to offset the tendency of elevated venous pressure to cause a rise in capillary pressure. Furthermore, if compensatory arteriolar constriction occurs, this arteriolar vasoconstriction causes so much pressure drop before blood gets to the capillaries that this also offsets the effect of elevated venous pressure. To summarize, it has been found experimentally that factors which cause diminished flow of blood through the heart probably cause at the same time either a slight fall in capillary pressure or no change at all. When the capillary pressure falls, in accordance with Starling's law of fluid exchange between the tissue spaces and capillaries, fluid flows from the interstitial compartment into the circulatory system. This flow of fluid into the circulatory system may account for some of the very early increase in blood volume which occurs soon after acute cardiac failure.

Far more important as the cause of increased blood volume appears to be the retention of water and salts by the kidney.[21],[22] Immediately after the heart fails and cardiac output is reduced, blood flow through the kidney decreases tremendously—much more than the decrease in blood flow through other areas of the body.[23] Furthermore, even if compensatory vasoconstriction occurs sufficiently to maintain a normal arterial pressure, blood flow through the kidney still remains greatly curtailed as long as cardiac output is below normal. Therefore, *fluid retention by the kidney continues until the blood volume increases sufficiently to cause a considerable increase in venous pressure.* This elevated venous pressure in turn causes cardiac output to increase greatly. Indeed, cardiac output often approaches normal; flow of blood through the kidney may again become almost normal; and the kidney output may once again become equal to fluid intake. In this new state of compensated equilibrium the circulation of blood through the body, even with a weakened heart, may be essentially normal, though there will have been two important changes: first, there will be an increased blood volume, and, second, there will be a concomitant elevation in peripheral venous pressure.

It has been known for a long time that the number of red blood cells increases along with the increase in blood volume,[24] though this requires several weeks or more to occur completely. This increased production of red blood cells by the body has been ascribed to relative ischemia of the bone marrow which occurs during failure. Obviously, the increased quantity of red blood cells aids in the compensation for failure, first, by further increasing the blood volume, and, second, by providing greater oxygen and carbon dioxide carrying power so that less cardiac output is required.

C. The Cause of Peripheral Edema in Cardiac Failure:

It was noted above that immediately following diminished cardiac output capillary pressure appears either to remain constant or to fall slightly because decreased arterial pressure or increased arteriolar resistance offsets the effect of increasing venous pressure on the capillary pressure. Therefore, peripheral edema does not occur immediately after acute failure of the heart. As the quantity of fluid retained by the kidney becomes progressively greater, with resultant increase in venous pressure, it is logical to assume that the rising venous pressure as well as the rising cardiac output will now cause capillary pressure to rise progressively. Obviously, after several days to a week or more, this rising capillary pressure causes fluid to begin flowing from the capillaries into the tissues, and the presence of progressively greater quantities of fluid in the interstitial spaces causes edema.

D. Progressive Edema in Uncompensated Failure:

If a cardiac lesion is extremely severe, it may be impossible for the venous pressure to rise high enough that a normal cardiac output can ever take place again. Nevertheless, the kidney will continue to conserve fluid output, and venous, capillary, and tissue pressures will continue to rise in a futile effort to increase cardiac output. Obviously, edema will be progressive as long as this vicious process continues. Furthermore, venous pressure may become so great that it overloads the heart beyond its limit to increase cardiac output, and the output in such circumstances may actually fall.[20] Obviously, severe congestion, either peripheral or pulmonary, is advantageously treated by decreased fluid and salt intake, powerful diuretics, and, occasionally, venesection.

E. The Terminology of the Different Types of Heart Failure:

While discussing the development of high venous pressure and edema during the process of compensation, the commonly used terms "forward" and "backward" failure of the heart have been purposely avoided. The reason for this is as follows: the forward component of failure (in other words, decreased cardiac output) and the backward component of failure (in other words, damming of the blood in the veins) are inseparable from each other. There has been the implication many times in the past that one type of lesion in the heart may produce failure of "forward" propulsion of blood and another type may produce "backward" damming of blood. How could this be possible when, regardless of what the heart lesion may be, the decrease in cardiac output must be equal to the decrease in venous return to the heart? In other words, insofar as the peripheral circulatory system is concerned, except during momentary changes in volume of the heart chambers and pulmonary vessels, cardiac input remains always and constantly exactly equal to cardiac output. Therefore, whenever the heart fails in its duty to deliver blood to the arterial system there must exist a concurrent damming effect on venous return to the heart, and the converse of this is equally true. Therefore, the terms "forward" and "backward" are an example of unfortunate semantics.

Yet, there do exist two specific classes of symptoms in patients with failure:[25] first, symptoms predominantly of low blood pressure and diminished circulation, which correspond to "forward" failure, and, secondly, symptoms predominantly of venous congestion which correspond to "backward" failure. The first class of symptoms occurs almost entirely among patients with acute failure of the heart who have had no previous cardiac disability.[19] The second class of patients, with symptoms predominantly of venous congestion, may be divided into two groups: first, those with peripheral congestion and, second, those with pulmonary congestion. Pulmonary congestion results either acutely or chronically from left-sided failure, but severe peripheral congestion occurs only in acute cases who have had previous continuous cardiac disability or in late cases who have already had sufficient time to collect fluid and to increase the blood volume.[9]

It should be asked once again, how is it possible for cardiac output and venous return to be different from each other even though this is the implication when the terms "forward" and "backward" failure are used? In order that the terms may not confuse the physiology of the mechanisms, it is suggested that the different types of failure be called simply "failure with low cardiac output", "failure with peripheral congestion", and "failure with pulmonary congestion". Obviously, the majority of cardiac failure patients have varying combinations of these three different types of failure rather than a single type, but, at least, adherence to this simple terminology, instead of the use of the ambiguous terms "forward" and "backward", will prevent physiologically false connotations.

F. Acute Cardiac Failure with Low Cardiac Output and Its Treatment:

It has been the express purpose of the presentation thus far to emphasize the importance of increasing blood volume as an element of physiological compensation following acute cardiac failure. A week or more, however, is required for this compensatory mechanism to develop fully, and while one is waiting for its development the patient often dies of "cardiac shock". Almost half of the patients entering the hospital with acute failure due to coronary thrombosis have blood pressures approaching shock level with accompanying signs of severe circulatory incompetence such as cyanosis, rapid pulse, dyspnea, and cold extremities.[19, 26, 27] Even in a normal person prolonged low blood pressure is lethal. Indeed, in this laboratory, the following approximate time intervals have been found to be the maximum that a dog can stand low mean arterial pressures and still survive: zero pressure, 90 seconds; 20 mm. Hg, 6 minutes; 40 mm. Hg, 30 minutes; and 60 to 70 mm. Hg, indefinitely. Note very particularly that it is a *normal* animal that 60 to 70 mm. Hg of blood pressure is needed in order to preserve life indefinitely—not an animal with coronary occlusion. Actually, one of the most lethal effects of low blood pressure is the resulting ischemia in cardiac muscle itself, for at low pressures coronary blood flow decreases below that needed to sustain normal myocardial metabolism.[28] Therefore, if greatly decreased cardiac output is allowed to develop following coronary occlusion, it is reasonable to expect progression of the myocardial damage. In short, it may be assumed on the basis of logical physiological considerations, as well as on the basis of clinical reports,[29] that death is almost certain to occur if blood pressure is allowed to remain at low levels over any prolonged period of time.

How might cardiac shock be corrected in the patient with acute cardiac failure? The experimental answer to this has been, very definitely, transfusion. In weakened heart-lung preparations, particularly, and in animals with partially obstructed flow of blood it has been noted numerous times in this laboratory that transfusion, which causes a resultant increase in venous pressure, is capable of increasing the cardiac output unless the cardiac damage is extremely severe.

The reason why transfusion has been assiduously avoided by cardiologists has been the fear of causing congestion—particularly pulmonary congestion—and possibly of causing overdilatation of an infarcted heart with consequent rupture. If one looks upon increased blood volume as a compensatory mechanism which is going to come about anyway within a week or more, why not speed up this compensation in the early phases of the infarction while the heart is in its state of sluggish circulation and while the infarcted muscle is still strong enough to resist rupture? Indeed, transfusion has been tried in a few cardiac shock patients with great success,[30],[31] despite the abhorrence that many physicians accord this procedure. On the other hand, under the assumption that acute failure might be profitably treated by venesection, 500 and 700 cc. of blood were removed respectively from two patients by other investigators.[32] Both of these patients died within a few hours thereafter.

Both experimentally and clinically, the evidence indicates that relatively large quantities of blood are needed in the treatment of low cardiac output in severe acute cardiac failure- -perhaps 1000 cc. or more of blood or plasma.

Obviously, there remain many contraindications to the use of transfusion during cardiac failure, pulmonary congestion is particularly important. This recommendation of transfusion, therefore, is made in the hope that it will be given adequate clinical trial in noncongestive patients who are about to die as the result of markedly curtailed circulation. If, in a large number of these patients, the results prove favorable, as the experimental observations and early clinical trials indicate should be the case, such treatment will probably become generally favored.

SUMMARY

On the basis of a review of the literature and special experimental studies in dogs, it is concluded that retention of fluid by the kidney, with consequently increased blood volume and elevated venous pressure, is a usually desirable physiological compensatory mechanism which aids in the restoration of normal cardiac output. It is pointed out that in severe cardiac failure edema is an unfortunate accompaniment of this compensatory mechanism. When cardiac weakness is extremely severe, the compensatory fluid retention and increased venous pressure can never cause full return of normal cardiac output although fluid continues to be retained indefinitely. This causes progressive edema that can be controlled only by restriction of fluid and salt intake and augmentation of kidney output by the use of powerful diuretics.

The terms "forward" and "backward" failure of the heart, from a physiological point of view, are ambiguous, and it is, therefore, suggested that the different types of cardiac failure be grouped under three classifications with the following simple, physiological designations: failure with low cardiac output, failure with peripheral congestion, and failure with pulmonary congestion.

On the basis of experimental observations, it seems reasonable that a patient who is about to die from acute failure with low cardiac output should be given a blood transfusion to increase venous pressure so that a more nearly normal cardiac output may result. This, in effect, speeds up the natural compensatory blood volume increase which, otherwise, requires a week or more to develop fully.

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MEDICINE AND RELIGION — GROUP PRACTICE

By *Gerson S. Engelmann, D.D.*
Minister, United Protestant Church
Park Forest, Ill.

DOCTOR and clergyman have a common ancestry. They are the twin sons of the ancient medicine man of primitive society. By magical incantations, the medicine man sought to cure disease, and by sacrifice and prayer, he sought the aid of a power that was greater than his own. As man learned correct principles of association, legitimate medical science replaced the falsity of primitive magic. But his own strength was still insufficient to meet all his needs. He was still dependent upon that power in the universe that was over, above, and beyond his control. His own violition did not start or stop the life process within him.

Doctors and clergymen can, and should be, powerful allies. They have a more intimate relationship with persons than have men of any other profession. Motives of men are uncovered before their eyes. Their professional tasks permit them to invade the innermost sanctuary of the human spirit. No secrets are hidden from them; all doors of the human personality unlock to the powerful keys of religion and medicine.

People trust both doctors and clergymen implicitly. Furthermore, both have the unique advantage of coming into contact with their patients or parishioners at the crisis situations of life. These are the occasions when the human personality is very susceptible to anything that is said and done. It is their privilege to share the deepest joys and the deepest sorrows that men can know.

Certainly, two professions like this can and must work together. The doctor, with the discoveries of modern scientific medicine, can do much, but he can accomplish still more when the clergyman is also at hand with the spiritual resources of God. The clergyman can challenge people to the better life, but they cannot respond effectively unless their bodies and minds are healthy. Working together, medicine can continue to cure and prevent the physical and psychic ills of men, while religion fills the resultant better life with new drives, goals, and all-absorbing purposes.

(Guest editorial from the JSAMA.)

Fluorine

GUEST EDITORIAL

Felix J. Underwood, M.D.
Jackson, Miss.

When the Texas rural dentist claimed that children who were born and reared in his county had almost no cavities in their teeth, about as many of his colleagues believed him as believed Columbus when he claimed he could sail west and arrive home from the east. After some years of reiteration on this subject, the Public Health Service sent dental and epidemiological experts to give this thesis a thorough scientific investigation. The rather remarkable finding was, that the local practitioner's observation checked almost exactly with the surveys of the experts.

The vast majority of dental cavities were found in the mouths of adults and children who had spent their early years elsewhere. An intensive investigation was then launched to find the factor that brought about the striking differences between the tooth decay in long-time residents and recent arrivals. The investigations involved all the factors usually considered as having a bearing on tooth decay, and some that were purely speculative. The water supplies of a greater part of the county were found to contain, among other things, one part of fluorine in each one million parts of water.

Immediately, water supplies in various parts of the nation were examined with this point in view. Rough correlations of the scarcity of cavities and the occurrence of fluorine in the public water supplies were found in many places. Many carefully planned research studies have been completed and the place of fluorine in the problem of dental caries has now been well established. Some of the findings are:

1. Children who have used drinking water bearing one part per million of fluorine from birth to six years of age have 65 per cent less cavities than children living under similar circumstances, except with water supplies having little or no fluorine.
2. Children who were ten years of age when they began the use of water with adequate fluorine content were found, six years later, to have 16 per cent less cavities than in nearby cities where local authorities wished to continue their previous water supply and thereby act as a "control study".

Dental caries is said by some authorities to be the most prevalent of all human pathology. Any preventive measure that will reduce the occurrence of this almost universal pathology by 65 per cent in the age group that is forming teeth, is an important step forward in preventive medicine.

The Mississippi State Dental Society has been active in the health education program in this matter. The Mississippi State Department of Health has, for many years, collected samples of all public water supplies, for examination in the laboratory, for sanitary and other purposes.

During the past several years, the examination of the fluorine content has been included with these other examinations. These data are now available for many of our municipal and public water supplies. The individual city supplies are found to vary from zero to the full quota of one part per million.

Forrest, Scott County, and Columbus, Lowndes County, have already installed equipment for bringing the fluorine content to its optimum point. Some of our public water supplies have sufficient fluorine content now. Others have been found deficient in greater or lesser degree.

The State Board of Health has provided a resolution that in those public water supplies where fluorine is needed, it may be added in such quantity as will bring the total amount to the optimum for the control of dental caries. Several cities now have the matter of adopting this resolution and thereby controlling this preventable condition, under advisement.

Mottling of the teeth is never seen except when the fluorine content of water is double the optimum amount. The margin of safety is therefore wide. By a study over long periods of time, the amount of fluorine needed in each water supply can be determined with scientific accuracy. The State Board of Health is now making such studies.

CONCLUSION

That some foods may be deficient in "trace elements" has been recognized for some years. Margarine, low in vitamin A, and white bread, low in vitamin B, are well-known examples of

(Continued on page 28)

NEW DRUGS NEW DEVICES NEW DIGESTS

What the Product Is: Viomycin, an antibiotic that has been isolated from growths of bacterium found in Florida soil.

What it's for: Employed to discourage growth of "Mycobacterium tuberculosis." Viomycin should be prescribed in combination with streptomycin, dihydrostreptomycin, para-aminosalicylic acid or isonicotinic acid hydrazide.

How Supplied: Viomycin (sulfate) is supplied as a sterile powder in steri-vials containing the equivalent of 1.0 gm. of Viomycin base; individual cartons and packages of 10.

Who Makes it: Parke, Davis and Company, Detroit.

§

Description: Stilbamidine is a new therapeutic agent for the treatment of systemic fungus infections.

Indications: *Blastomycosis* — A rare, but ugly fungus infection found almost exclusively on this continent that is fatal in its systemic or disseminated form. Stilbamidine has a fungistatic action on B. *dermatitidis.*

Leishmaniasis — Also known as kala-azar. It is a tropical disease infection previously treated with antimony compounds. It is not caused by a fungus.

Multiple Myeloma — Stilbamidine probably does not alter the course of the disease, but has dramatically relieved the bone pain associated with it in a majority of cases.

Administration: Stilbamidine must be given only under careful medical supervision. Solutions should be freshly prepared within an hour of use and protected from light. It is administered by intravenous injection with a continuous slow drip. A course of therapy is usually 15 injections of 150 mg. Stilbamidine. (Precautions and contraindications should be known in advance of therapy).

Form: Stilbamidine is packaged in ampuls. Each ampul contains 150 mg. of Stilbamidine isethionate sterile powder. Wholesale price per ampul is $4.00; per box of 5 ampuls $19.50.

Source: The Wm. S. Merrell Company, Cincinnati 15, Ohio.

§

What it Is: Monichol is a new physio-chemical complex containing as its components, Polysorbate 80-Choline and Inositol in a flavored aqueous and glycerin base.

Formula: Each 5 cc. contains:

Polysorbate 80	500 mg.
Choline Dihydrogen Citrate	500 mg.
Inositol	250 mg.

Indications: Monichol is indicated in those conditions characterized by hypercholesteremia of the idiopathic or familial type. It is also of value in disturbances of the cardiovascular system associated with hypercholesteremia.

Action: In the above cases Monichol generally lowers blood cholesterol from the hypercholesteremic levels to normal cholesteremic values. Monichol favorably affects cholesterol metabolism in hypercholesteremics with intact adrenals but does not disturb normal cholesterol metabolism.

Suggested Dosage: 1 teaspoonful (5 cc.) four times daily; or two teaspoonfuls twice daily; or as directed by the physician.

Suggested retail price: $5.70 per 12 oz. bottle.
Wholesale list price: $3.80 per 12 oz. bottle.

Who Makes it: Ives-Cameron Company, Inc.

§

Description: Multivitamin Infusion, the original *aqueous* multivitamin solution designed for inclusion in intravenous dextrose and saline infusions. Supplies the normally oil-soluble vitamins A, D, and E made completely water-soluble, together with essential B complex factors.

each 10 cc. ampul provides:

Ascorbic Acid (C)	500 mg.
Vitamin A	10,000 U.S.P. Units
Vitamin D	1,000 U.S.P. Units
dl-Alpha Tocopherol (E)	5 mg.
Thiamine HCl (B_1)	50 mg.
Riboflavin (B_2)	10 mg.
Niacinamide	10 mg.
Pyridoxine HCl (B_6)	15 mg.
Panthenol	25 mg.

Action and Uses: For emergency feedings in surgery, extensive burns, fractures and other trauma, severe infectious states, comatose conditions, etc., which may provoke a shock or stress syndrome requiring increased nourishment. Also indicated in biliary disease, peptic ulcer, celiac disease, persistent diarrhea and other conditions which impair absorption and utilization. Reduces incidence of postoperative nausea and vomiting, improves sense of well being and appetite, reduces postoperative abdominal distention, acclerates healing of surgical wounds.

Administration: for intravenous feeding, contents of the 10 cc. ampul is added once daily directly to not less than 500 cc., preferably 1000 cc. of intravenous dextrose or saline.

Who Makes It: U. S. Vitamin Corporation.

§

FOOD FOR THE ADEQUATE LOW-CALORIE MEAL PLAN is a 6 page booklet offered to readers of *Blue Print for Health* (the quarterly health digest published by the Blue Cross Commission of the American Hospital Association) as well as to the general public as part of the Blue Cross and Blue Shield health information program.

Contents: The low-calorie meal plan is a modification of a normal food pattern in that the prescribed daily allowance has a caloric value below the total energy requirement for the day, thus permitting a loss of body fat. At the same time, protein, minerals and vitamins remain at or above levels required for nutritive efficiency.

In this booklet is outlined a plan for a 1500-calorie diet, which, if followed consistently, will result in a gradual weight loss without hunger while establishing a pattern for wholesome meals.

About the Author: Dorothea F. Turner is editor, The Journal of the American Dietetic Association and Chief Medical Nutritionist, Department of Medicine, University of Chicago Clinics.

Prices: Single or first copies, 10c; additional copies 5c each; $4.50 per hundred plus postage in quantities of 100 or over.

Publishers: Blue Cross Commission, 425 North Michigan Ave., Chicago 11, Illinois.

* * *

What the Product Is — AMBODRYL HYDROCHLORIDE (bromodiphen-hydramine hydrochloride) is a new antihistaminic agent which has a minimum of side reactions.

What it's for — It is used to treat a wide variety of allergics, including hay fever, allergic rhinitis, asthma, urticaria, eczema and migraine.

How Supplied — It is supplied in Kapseal form, 100 to a bottle. Each Kapseal contains 25 mg. of Ambodryl hydrochloride.

Who Makes it — Parke, Davis and Company, Detroit.

§

PLUG-IN PORTABLE ELECTRIC WATER COOLER

Weighing in at only 65 pounds, yet complete with ⅛ horsepower hermetically sealed compressor unit, the new Coolstream "Little Betsy" portable water cooler is already finding an expanded market in homes, doctor's offices, gas stations, diners, small business offices, and other locations where space is at a premium.

The new cooler fits any small table or desk top, or can even hang from a wall, yet holds a full gallon of liquid. It will serve 96 4-ounce cups per hour of water cooled from 80° to 50° F. The user simply fills the unit and plugs the drop cord into 110V 50/60 cycle current, and it is in operation. If desired a 1 gallon, 3 gallon, or 5 gallon bottle of water may be used.

As with all Coolstream products, the "Little Betsy" unit carries Coolstream's unusual 5-year warranty of repair or replacement free of charge if cooler should fail due to defect in workmanship or material. "Little Betsy" is available at a list price of $160.00, Karen Corporation, 157 East 128th St., New York, 35, N. Y.

§

A total of $5,242,183 was spent by the Borden Company in the State of Mississippi during 1952 for milk and other farm products, payrolls and taxes, according to an expenditure breakdown reported by the company's Prescription Products Division.

Altogether, the company spent $508,172,763 in the United States last year. This embraces activities in 47 of the 48 states, plus the District of Columbia, according to the division which manufactures and distributes a well-known line of infant feeding formula products. The company has 123 stockholders and 231 employees in Mississippi.

The Prescription Products Division's major manufacturing plants are located in Elgin, Illinois, and Boscobel, Wisconsin. The Elgin plant manufactures and packs BREMIL, BIOLAC and MULL-SOY, while the Wisconsin plants manufacture DRYCO and BETA LACTOSE.

§

PEDIATRICS

Harvey F. Garrison, M.D.

Jackson, Miss.

Infections Due to Penicillin-Resistant Staphylococci in Young Infants. Andre Bertoye and M. Carraz, Lyons, France. J. de med. de Lyon 32:765-73, August 20, 1951.

Staphylococci infections in nursing mothers and their infants have increased in France since 1941-1942. With the use of penicillin in the treatment of such infections, the number of penicillin-resistant strains has also increased. Staphylococci cause not only cutaneous infections in infants, but also otitis, mastoiditis, meningitis and pneumonia. Since health persons may be carriers of staphylococci, including strains resistant to penicillin, antiseptic precautions in the care of infants are important in the prevention of the spread of such infections. When such an infection develops in an infant, an antibiotic active against penicillin-resistant staphylococci should be used in treatment; aureomycin, and more recently terramycin, has proved effective in such infections in infants.

§

FLUORINE

(Continued from page 26)

wholesome foods that are made better by vitamin supplementation. State laws now provide that these vitamin supplements be made.

Food and water deficiencies in iodine content were first reported by Marine and Kimble, in Michigan and Ohio. Large scale replacement of this deficiency has been made by adding one pound of sodium iodide to each ton of salt refined in the state of Michigan. Simple goiter has almost disappeared since the supplementation has been made.

The cities having public water supplies deficient in fluorine will be notified of the degree of deficiency found. Full technical details of how this can be replaced will be available from the State Board of Health. It now appears that the march of progress is under way in this new field of the control of dental caries.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Second Street, Booneville, Mississippi.

W. H. ANDERSON, M.D.	Editor-in-Chief
MILDRED P. ANDERSON	Assistant Editor
David E. Guyton, Blue Mountain College	Poet

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Cummings, H. McCall, M.D.	Gulfport	President-elect
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Address all material for publication to W. H. Anderson, M.D., 104 Second Street, Booneville, Mississippi.

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Editorials

STATE MEETING

The Mississippi State Medical Association, which held its annual session on the Coast recorded a fine attendance and program, and welcomed a number of distinguished guests. Dr. George Lull, executive secretary of the American Medical Association, brought greetings and a message evincing the great service being rendered by the greatest medical association in the world. Mr. C. P. Loranz, executive secretary of the Southern Medical Association, next to the largest medical organization in the nation, and Dr. Walter Jones of Miami, Fla., president of the Southern Medical Association, were welcomed. Mrs. Richard Clark of Hattiesburg, president of the Woman's Auxiliary, and as master of ceremonies for the Doctors Day luncheon given by the Auxiliary, most graciously presented all guests of the association.

Dr. Louis H. Bauer, president of the American Medical Association, gave a stimulating address on President's Night. On the same program Dr. O'Mara delivered the oration on the life and work of the late versatile and brilliant Percy Wall. Dr. Lamar Arrington, president, presided over this climactic feature of his presidential year.

The past presidents enjoyed a nice breakfast at the hotel with Dr. E. C. Parker presiding.

At the close of an unusually busy session, Dr. M. Q. Ewing of Amory was installed as president. An able surgeon, he has given of his time liberally always to organized medicine. He will work hard at the job of making a good leader. Dr. Cummings McCall of Gulfport was chosen as president-elect and takes over the job of organization and membership.

The next meeting will be held in Jackson.

§

OUR NURSING PROBLEM

We have a nursing problem in our state, which we feel sure is general. The discussion on this subject at the state medical meeting, though warm, failed to produce the satisfactory solution. We are very sure that the standards for the registered nurse should not be lowered; upon this our doctors are in agreement.

Our state will soon have a fine system of hospitals. We are on the way with an affiliated or integrated system of hospitals with the four-year medical school as the motor power to carry medical service out to all our people. These community hospitals should furnish an abundant variety of clinical material for our teaching hospital. The system we have should also bring interns out to the small hospitals. Likewise, we should find in our set up an excellent medium for training registered nurses. We have the best system of junior colleges in the nation. The nurse can take several months of academic training in the junior college, or the senior college if she prefers, intensify her nursing training in the fifty-bed hospital, and finally complete it with six to eight months at the central hospital in Jackson or elsewhere. The details will have to be worked out. But our system, hospital and educational, offer excellent training facilities for registered nurses. Mississippi can have the type of nurses she needs, from practical nurses to specialist nurses.

§

TRAUMATIC WOUNDS

Traumatic wounds are on the increase. There has been a geographical shift of the injury areas from the industrial centers to the highways, the home, and the remote places of the airplane crash. Injury and death by accident now exceed war tolls. Seven out of ten motor vehicle deaths in 1951 occurred from accidents in rural sections. The thoughtful mother may say any time with reason, "Well son, a hitch in the army is safer than everyday civilian life." In this same year motor vehicle deaths amounted to 37,000 and 1,300,000 lost at least one day's time. The total cost for deaths and injuries the same years was estimated at $3,400,000,000. Industry is moving to our state, moving to the small town and rural community. The tractor is replacing the horse-drawn machinery of the farm, polished hardwoods and synthetics now comprise most of the surfaces in homes even of small town and rural communities. The atomic development is holding some people in the country and causing some in the big centers to think of moving to the rural community.

So the general practitioner of medicine and surgery must assume a greatly increased responsibility in treating traumatic wounds and in rehabilitating the injured. He must think in terms of prevention and he must know, practice, and preach first aid. The general surgeon must know how to control hemorrhage, treat shock, and cleanse the average wound. Good functional results of an injured organ must be a first consideration, but cosmetic surgery is mandatory. Conservation of tissue and the use of an organ are the responsibility of the general surgeon. Although the general surgeon may not do much plastic and reconstructive surgery, they are a challenge to his resourcefulness and skill.

The best means known must be used to prevent infection, in addition to good asepsis. The antibiotics may be life savers as well as wound healers.

Providing the best treatment possible for traumatic cases at the time of accident, and looking forward to the final processing of the case, constitute a special responsibility for the general practitioner in medicine and surgery but our medical schools and all who see the wisdom of the small hospitals throughout the country share these goals. When accidental death and injury take a greater human toll than war, and the scenes of injury are chiefly the rural community and small town, the necessity of a complete system of hospitals out in the rural communities and small town should be obvious to every lawmaker and citizen.

§

ALABAMA SEMINAR

The Alumni Association of the Medical Department of the University of the University of Alabama instituted a three-day medical seminar, May 21-23 in Birmingham. The seminar was held in honor of Dr. John M. Gallalee, head of the Medical Department. Dr. Gilbert F. Douglas was general chairman. He brought together one of the best medical programs we have ever attended, something of extraordinary value to every field of practice. Among the outstanding men on the program were: Drs. George Pack of New York; Emil Novak, Baltimore; Louis H. Bauer, president of the American Medical Association; Jean Paul Pratt, Detroit; Haven Emerson, New York; R. L. Sanders and Harwell Wilson of Memphis; and Henry Boswell of Mississippi. Dr. Seale Harris was unable to attend on account of illness. No one on the program would have been more gladly heard than Dr. Harris, the beloved of all.

Nurse Education was presented in a most interesting paper by Florence A. Hixon, *Dental Caries* by J. F. Folker, *Evaluation of Shortness of Breath* by Dr. Tinsley Harrison, *What Medical Science Has Taught Us about Alcohol* by Dr. Haven Emerson, and *Cancer* by Dr. George Pack were highlights.

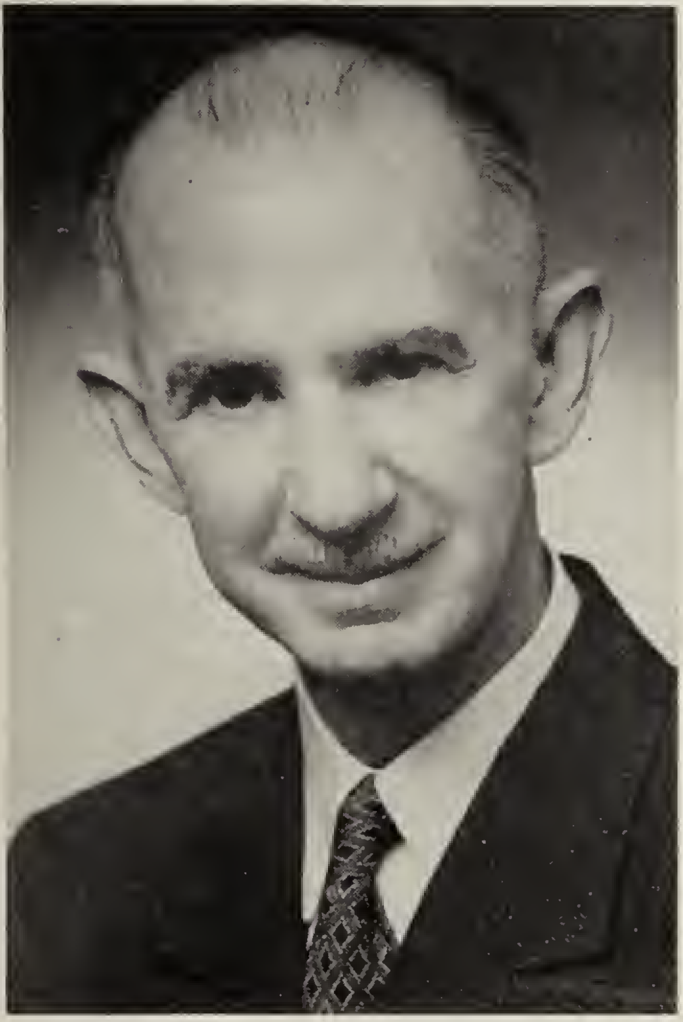
The alumni of the medical school of Alabama under the leadership of Dr. Gilbert Douglas are to be congratulated for the above program.

§

Drs. J. P. Culpepper of Hattiesburg and John Lucas of Greenwood are the delegates of the Mississippi State Medical Association to the American Medical Association. The American Medical Association is concentrating in many ways upon improved public relations, while promoting the interests of the people and the doctors. There is much work yet to be done if we shall continue to have democratic medicine.

News and Comment

New State President



M. Q. EWING, M.D.
Amory, Miss.

DR. EWING ELECTED TO PRESIDENCY; DR. McCALL NEW PRESIDENT-ELECT

Annual Meeting Marked by Scientific Excellence, Heavy Business Agenda

Dr. Cummings H. McCall of Gulfport was elected president-elect of the Mississippi State Medical Association in climax to a heavy schedule of business cleaned up by the house of delegates before adjournment, May 13.

Dr. M. Q. Ewing of Amory received the gavel from outgoing president, Dr. Lamar Arrington of Meridian, and took his post at the helm of the state association for 1953-1954.

Other officers elected include: *vice-presidents,* Dr. William T. Wilkins of Clarksdale; Dr. J. Harvey Johnston, Jr., of Jackson; and Dr. R. H. Clark of Hattiesburg; *historian,* Dr. D. S. Pankratz of University; and *associate editor,* Dr. L. T. Carl of Jackson.

Dr. J. P. Culpepper of Hattiesburg and Dr. John F. Lucas of Greenwood are delegates to the American Medical Association, which convenes in Atlantic City, June 1-5.

The new state president is Virginia-born. Welcomed to the home of George A. and Mattie Q. Ewing in Gate City, Va., he was given the family name of Monterville Q. Ewing. Educated in Washington, D. C., he earned both his B.S. and his M.D. degrees from Georgetown University. Postgraduate training followed in the hospitals of Washington, D. C., and New York City.

Dr. Ewing served with the Medical Corps. of the U. S. Army in World War 1.

For the past thirty years Dr. Ewing has been located in Amory, where he devoted his practice to surgery, except for a second term of service for his country, this time with the Medical Department of the U. S. Navy in World War 11, from 1942 to 1947. Two years were spent at sea, both in the Atlantic and Pacific, followed by an assignment as chief of surgery at the U. S. Naval Hospital in New Orleans. He was retired with the rank of commander.

Dr. Ewing married Miss Julia Frances Rather of Jackson, Tenn., in 1924. Their only child, a son, Dr. Richard M. Ewing, is now in training in surgery at Baroness Erlanger Hospital, Chattanooga, Tenn.

Always deeply interested in the progress and ideals of the medical profession, Dr. Ewing assumes his place of leadership in the Mississippi State Medical Association with the firm confidence of his confreres. A year of accomplishment is in store.

MEDICAL TEACHERS

The doctor who wins a "big name" in research does not always make the best medical faculty member or department heard, warns Dr. E. H. Watson in the May issue of the *Journal of Medical Education.* Dr. Watson is associate professor of pediatrics and child health, University of Michigan Schools of Medicine and Public Health.

In a plea for more careful selection of the men who will teach the doctors of tomorrow, Dr. Watson points out that too often the man who has achieved prominence for research or clinical achievement is given a top administrative or teaching position, usually making it impossible for him to continue the work for which he is best fitted.

"A topnotch teacher is more important to the education of the medical student than is the successful researcher or the brilliant clinician," writes Dr. Watson.

The good teacher, he says, gives the student far more than scientific training. He teaches the doctor-to-be that wisdom and understanding are important attributes for a physician. He teaches him to remember that sick people are fellow human beings in trouble.

Dr. Watson suggests also that one of the responsibilities of a good medical teacher is to study his students and junior staff members in an effort to help them find the phase of medicine for which they are best suited.

§

Mrs. Clark, Dr. Scudder, Dr. Grossnickle

1861 LENDS A HAND TO 1929

One of the happy little inflections to a climactic program on Doctors' Day, these two practitioners of medicine were caught by the photographer just after they were presented gifts from the Auxiliary president, Mrs. Richard Clark of Hattiesburg. Since Dr. Scudder (left) of Mayersville our oldest physician, attended an obstetrical case in January, fixing a flat on his trusty Ford en route, he received in token a book on obstetrics! Dr. Grossnickle of Macon, youngest practicing physician in the state, was provided the latest on a specialty on which he has yet to acquire wisdom—geriatrics.

FIFTY - YEAR CLUB

Dr. J. K. Avent, Grenada, and Dr. V. B. Philpot, Holly Springs, were hosts to the Fifty-Year Club, State Medical Association, at a luncheon at twelve o'clock, Tuesday, May 12, 1953, in the South Rose Room, Buena Vista Hotel, Biloxi, Mississippi. The fifty-year motif was carried out with gold ribbon and a miniature gold horse and buggy which were used in the table decorations.

The following members of the Fifty-Year Club were present: Dr. E. C. Parker, Gulfport; Dr. Isaac Edwards, Canton; Dr. H. C. Owen, Holly Bluff; Dr. J. G. Backstrom, Tutwiler; Dr. T. M. Dye, Clarksdale; Dr. H. L. McKinnon, Hattiesburg; Dr. H. F. Garrison, Sr., Jackson; Dr. J. Rice Williams, Houston; Dr. W. H. Scudder, Mayersville; Dr. H. L. Lewis, Liberty; and Dr. W. H. Frizell, Brookhaven, president. Dr. Felix J. Underwood, Jackson, secretary, and Dr. W. H. Anderson, Booneville, sponsor, were also present. Guests in attendance were: Dr. George F. Lull, Chicago, Illinois, secretary and general manager, American Medical Association; Mr. C. P. Loranz, Birmingham, Alabama, Secretary-Manager, Southern Medical Association; Dr. Lamar Arrington, Meridian, president, State Medical Association; Dr. M. Q. Ewing, Amory, president-elect, State Medical Association; Dr. Jere Crook, Jackson, Tennessee, past-president, Southern Medical Association; Dr. R. C. Eley, Moss Point; Dr. J. R. Hill, Corinth; Dr. B. Lampton Crawford, Tylertown; Dr. G. W. F. Rembert, Jackson; and Miss Cleta Brinson, Jackson, secretary to Doctor Underwood.

The meeting was presided over by the president, Dr. W. H. Frizell, Brookhaven. The invocation was given by Dr. T. M. Dye, Clarksdale. Doctor Frizell reported that Dr. W. L. Little, Wesson, vice-president, was unable to attend on account of the condition of his leg which made it necessary for him to be on crutches. To Dr. W. L. Little, Wesson, Dr. G. S. Bryan, Amory, and all other members of the Club absent were sent messages, telling him how much they were missed at the meeting.

Dr. Lamar Arrington, president, and Dr. M. Q. Ewing, president-elect, State Medical Association, in their remarks both expressed the hope that they could live up to the examples that had ben set by some of the members of the Fifty-Year Club and that such examples should be a guiding light to all of the younger men of the State Medical Association.

Dr. George F. Lull recalled that he attended the meeting in 1947 when Dr. Rudolph Matas of New Orleans was present and made the observation that the young man coming out of medical school today misses the indoctrination that the older physicians used to give the young man finishing medical school, and that the young man in days past gained much knowledge from the older physician that he never learned in medical school. He also stated that the American Medical Association was proud of Mississippi; that every member of the Mississippi State Medical Association except two was a member of the American Medical Association, and that no other state had such a record.

Mr. C. P. Loranz stated that although he did not have a medical degree that he had been practicing medicine since October, 1912, when he became associated with the Southern Medical Association.

Each member of the Fifty-Year Club present gave his date of birth, date of graduation from medical school, and the number of years he had practiced medicine.

Doctor Underwood read a list of certificates which had been issued since the last meeting of the Association, and stated that it had been a pleasure to serve as secretary of the Fifty-Year Club, the total membership of which is now 105.

Dr. Jere Crook of Jackson, Tennessee, was made an honorary member of the Club.

Dr. H. L. McKinnon gave a resumé of the meeting of the World Medical Association which he had recently attended in Richmond, Virginia.

Dr. H. L. Lewis, Liberty, was presented his Fifty-Year Certificate and pin by Dr. Felix J. Underwood.

The following officers of the Club will be continued: Dr. W. H. Frizell, Brookhaven, president; Dr. W. L. Little, Wesson, vice-president; Dr. Felix J. Underwood, Jackson, secretary; and Dr. W. H. Anderson, Booneville, sponsor.

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DR. LUCAS APPOINTED TO SMA COUNCIL

Dr. John F. Lucas, Greenwood, has been appointed a member of the Council of the Southern Medical Association from Mississippi for a regular Council term of five years, beginning at the close of the annual meeting in Atlanta, Georgia, in late October, the appointment having been announced recently by the President-Elect, Dr. Alphonse McMahon, St. Louis, Missouri. Dr. Lucas succeeds Dr. Lamar Arrington, Meridian, whose term will expire with the close of the Atlanta meeting and who having served the constitutional limit is not eligible for reappointment.

§

FORMER MISSISSIPPIAN AUTHORS HEALTH PROGRAM ARTICLE

Mrs. Norma Sanford Cavaglieri, a graduate of Blue Mountain College, is the author of an article entitled "A New Mental Health Program," published in *The American Journal of Nursing.* The magazine states: "Mrs. Cavaglieri is the mental consultant at Roosevelt Hospital in New York City and was responsible for launching the program she describes here.

§

CONTRIBUTIONS OF POSTGRADUATE MEDICINE

Basically, the needs of postgraduate medical education reveal that by sometimes over-emphasizing the scientific, undergraduate medical education often slights practical groundwork necessary for the young doctor. Dr. Pullen, Professor of Medicine, University of Texas, says that to train the student with any but the most comprehensive outlook toward medical practice is to train him inadequately.

Dr. Pullen suggests that today's graduate often reveals: a lack of regard for suffering and human life; deficient training in certain fields immediately applicable to medical practice, such as minor surgery and diseases of the skin and eye; insufficient basic grounding in common ills, care of the chronically ill, therapeutics, bedside diagnosis, use of modern community health facilities; and an inadequate comprehension of social, economic, governmental and other factors influencing the nature of medical practice.

§

PUBLIC RELATIONS IN THE MEDICAL SCHOOLS

Some of the difficulties encountered by medical schools have resulted from a lack of understanding of just what public relations is—and is not.

"Public relations," writes Mr. Williston, of the University of Illinois, "is an operating philosophy that must permeate the entire organization from the chairman of the board of trustees to maintenance personnel on the midnight shift."

He stresses the importance of two-way communication—from the public, so that the school will understand public attitudes, and from the school to help the public gain a correct understanding of the institution they help support.

Woman's Auxiliary

President	Mrs. S. Lamar Bailey	Kosciusko
President-Elect	Mrs. M. M. Snelling	Gulfport
First Vice-President	Mrs. Richard Clark	Hattiesburg
Second Vice-President	Mrs. James A. Kiely	Vicksburg
Third Vice-President	Mrs. W. H. Anderson	Booneville
Fourth Vice-President	Mrs. A. E. Brown	Columbus
Recording Secretary	Mrs. R. F. Grenfell	Jackson
Treasurer	Mrs. J. D. Simmons	Cleveland
Historian	Mrs. Harvey F. Garrison, Sr.	Jackson
Parliamentarian	Mrs. J. C. Suares	Jackson
Corresponding Secretary	Mrs. M. S. Riddell, Jr.	Winona

COMMITTEE CHAIRMEN

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Bulletin	Mrs. Augustus Street	Vicksburg
Doctor's Day	Mrs. E. L. Posey, Jr.	Jackson
Nurse Recruitment	Mrs. M. Dunn	Gulfport
Budget	Mrs. Stanley A. Hill	Corinth
Research and Romance of Medicine	Mrs. I J. Newton	Greenville
Legislation	Mrs. John Howell, Jr.	Canton
Preventorium	Mrs. Roy Biggs	Sanatorium
Revisions	Mrs. J. Rice Williams	Houston
Civil Defense	Gerald P. Wessler	Gulfport
Memorial	Mrs. R. B. Zeller	Hazlehurst

COUNCILORS

First District	Mrs. A. A. Aden	Indianola
Second District	Mrs. J. B. Rogers	Oxford
Third District	Mrs. S. B. Plott	Columbus
Fourth District	Mrs. Roy Smith	Durant
Fifth District	Mrs. N. B. Lewis	Vicksburg
Sixth District	Mrs. Lowry Rush, Jr.	Meridian
Seventh District	Mrs. Joe G. McKinnon	Hattiesburg
Eighth District	Mrs. R. B. Zeller	Hazlehurst
Ninth District	Mrs. Presley E. Werlein	Biloxi

THIRTIETH ANNUAL MEETING MARKED BY FINE ATTENDANCE, INTEREST, AND MEMORABLE PROGRAM

Meeting on the Coast, a biennial treat, yielded all the happy features of vacationing, plus one of the most memorable occasions for fellowship the members of the state organization ever enjoyed. Mrs. Richard Clark, president, charmingly presided over both the auxiliary sessions and the luncheons, her refreshing fund of witticisms and stories christening these events with sparkle and candor. Mrs. Ralph Eusden of Long Beach, Calif., the national president, and Mrs. George Lull of Chicago, Ill., and Mrs. E. A. Socola of New Orleans, were convention guests.

At the Broadwater Beach luncheon the members were regaled by a talented vocalist and a fashion revue of resort clothes, following which Mrs. Stanley A. Hill, president-elect of the Auxiliary to the Southern Medical Association, brought greetings and brief agenda from Southern. The next day the Doctors' Day luncheon highlighted the convention calendar. Given at the Buena Vista, around six hundred doctors and their wives were entertained. Dr. Walter C. Jones of Miami, Fla., president of the Southern Medical Association, brought the address.

The national president, Mrs. Eusden, re-emphasized cultivating friendly relations among physicians' wives, and pointed up its value in good citizenship, today, not tomorrow. "It is good will that we must spread toward organized medicine," she urged "and it is as precious as an orchid, as wonderful as youth, and as hard to keep!" She believes that wives of physicians have an obligation to major on this precious commodity as an obligation.

An instructive hour of flower arranging, presided over by Mrs. M. M. O'Mara and Mrs. John B. Howell, concluded the round of delightful informalities which marked the convention program.

DELEGATES TO A.M.A.

Mrs. Lamar Bailey, new president of the state organization, Mrs. Cummings McCall, Mrs. Stanley Hill, Mrs. Raymond F. Grenfell, Mrs. A. B. Harvey, Mrs. B. Z. Welch, and Mrs. Augustus Street were chosen as delegates to the national meeting in Atlantic City, June 1-5. Mrs. Street is chairman of the group.

FROM SPEECH BY MRS. RICHARD H. CLARK AT DOCTORS' DAY LUNCHEON MAY 13, 1953

We feel that the greatest fruition of Auxiliary work will come in community service. The doctor's wife should assume and discharge her part in the work of other groups of volunteer and professional health organizations, school education and character building groups. She can earn for herself and for doctors' wives as a class a reputation for reliability, integrity and service. In contrast, an indifferent attitude or a false move by a few has unpleasant repercussions upon the whole.

Forms of community service are many and varied . . . sponsoring underprivileged scout troops, contributing hours and equipment to polio wards, establishing circulating libraries in hospitals, assisting with cancer, polio, heart and tuberculosis seal drives, and many others, all of which help translate into local terms the aims and purposes of the medical auxiliary.

By meeting these responsibilities we can perhaps assist the medical profession in restoring itself to its rightful place in public esteem and to become again secure in its own integrity.

We have learned that good will cannot be bought, as evidenced by our government's experience in Europe, we know that it cannot be lobbied for in Washington, we even know that good will cannot be secured by the employment of a high pressure publicity firm. Good will can only be earned by real effort and real merit. It is the duty of every doctor's wife to earn her share.

Although the doctor's wife takes no Hippocratic Oath, she too can "practice uprightness and honor . . . and happiness and good repute" shall be hers.

§

DOCTOR'S WIFE

I have often wondered why you chose
A man whose life is always filled
With others' ills and pain.
You knew the hours that he would keep,
The many nights without his rest,
The days of cold and rain.

You listen as he tells you of
The little boy who broke his leg,
The girl who burned her arm,
The man whose ulcers acted up,
The "expectant" . . . false alarm.

And yet thru all this misery
Of pain and sickness born to us,
Watching death as well as life,
You found there was that deeper love—
To stand beside hom giving strength
Because you are . . . a doctor's wife.

Dr. Scudder and Dr. Grossnickle

OBSTETRICS TO GERIATRICS!

The highlight of the convention program each year is the Doctors' Day Luncheon which the Woman's Auxiliary schedules to include all doctors and their wives attending the convention. A unique feature of this year's memorable occasion was the presentation of Mississippi's oldest and Mississippi's youngest practicing physicians. Dr. W. H. Scudder of Mayersville, born September 17, 1861, holds the title for being the oldest—and delivered his last baby in January of this year! Dr. James W. Grossnickle of Macon, born December 12, 1929, is our youngest practitioner.

With fitting toasts, Mrs. Richard Clark, president of the Auxiliary, presented these honor guests with a book each—one on geriatrics to Dr. Grossnickle, the other on obstetrics to Dr. Scudder. The books were gifts from J. A. Majors Book Company of New Orleans and Dallas.

Gulfport Future Nurses, Club Given Statewide Recognition for Services

The Future Nurses Club of Gulfport High School received the high praise of the state Woman's Medical Auxiliary president at a recent annual auxiliary meeting on the Coast, and with good reason—the young high school girls, who hope to become nurses one day, have gained statewide attention for their outstanding work.

Under the guidance of the Woman's Medical Auxiliary of Gulfport, the Future Nurses have grown from 20 members at the outset in April, 1951, to a present enrollment of 43.

They have assisted in several public medical drives and are currently engaged in the cancer drive. They have collected food and clothing for local needy families; and they have sought to expand their knowledge of nursing with field trips.

Gulfport's young nurses of tomorrow were a local point of discussion at the annual meeting in February of the Woman's Medical Auxiliaries of Bay St. Louis,, Pass Christian, Gulfport, Biloxi, Ocean Springs, and Moss Point. At that time, Mrs. Richard H. Clark, Hattiesburg, president of the State auxiliary, commended both the group and the sponsoring Gulfport auxiliary.

Objectives of the club include stimulation of interest in the members to become future nurses. Every year, a large group of girls enter schools of nursing as a result of the vast information, work and interest the club provides its members.

Mrs. M. Dunn, 1952 president-elect of the Woman's Medical Auxiliary of Gulfport, has been chairman of the nursing program for the past two years, and was recently selected as State Nurse Recruitment chairman for Mississippi.

Recently, the Coast Nurses' Association planned an outstanding program for the Future Nurses' Club. On March 11, the club was taken on a Field Day trip through Charity Hospital in New Orleans with two auxiliary members, Mrs. Elmer Gay and Mrs. E. C. Parker, as chaperones.

At high school graduation exercises, this month the $100 scholarship award will be presented to the senior girl selected from the Future Nurses' Club who plans to enter a school of nursing in the fall. This will be the third scholarship winner in training for a nurse the Women's Medical Auxiliary of Gulfport is sponsoring.

The demand for nurses is growing steadily, the auxiliary explained. Public health authorities have estimated that by 1960 almost twice as many nurses will be needed as are active now.

Their responsibilities are growing, too. Members alone are not enough. Nurses must be well-selected and well-educated, both for nursing and for modern living.

In the words of Mrs. Deen, "The Future Nurses' Club has proved to be an excellent device for stimulating vocational interest. The enthusiasm of members and the good records of student nurses who were formerly members of the Future Nurses Club are evidence of its value."

"Gulfport owes its Future Nurses Club a debt of gratitude for some commendable achievements, not the least of which is the spirit of these young ladies who, at their age, are already placing the health of their community their number one concern."

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SHARP AND DOHME, MERCK MERGE

James J. Kerrigan is president of the recently merged Sharp and Dohme, Incorporated, and the Merck and Company. The merger became effective Thursday, April 30, when stockholders of both companies voted their approval.

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Dr. J. A. Clark, Sr., of Ruleville, Miss., received his fifty-year certificate and pin at the Rotary Club luncheon on April 30. Dr. Clark is a most unusual character. He has done a fine job practicing medicine through the years along with being a most active citizen. He has entered into the pleasures and joys and sympathies of the people, lived with and for them in every way to build a better citizenship. He is a versatile doctor and citizen of fine integrity, loved and respected by his people.

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Wrigley discovered that American jaws must wag and when he gave them something to wag against, riches were his portion. If all the world must fight, let truth be the challenge to every human. When it is crowned as victor, peace and security will be ours.

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ELECTROCARDIOGRAPHER, certified, desires to interpret electrocardiograms. Replies by return mail same day. $1.50 per interpretation. Write Box No. 2, *The Mississippi Doctor,* Booneville, Miss. 3t

Cardiac Arrhythmias and Their Management*

FRED J. McEWEN, M.D.
Wichita, Kansas

THE TERM CARDIAC arrhythmia signifies abnormal rhythm of the heart and irregularities of the heart beat. Abnormal rhythms are called ectopic rhythms because they originate in other areas than the normal impulse former or pacemaker. Cardiac arrhythmias may be transient or permanent. They may be encountered in the course of routine examinations and the patient may be entirely unaware of their existence or they may be the cause of an anxious call for a doctor at most any time. They may be innocent and harmless or on the other hand they may be dangerous leading to congestive failure, coronary insufficiency, angina pectoris, or cardiac standstill.

The physician who is a careful observer and takes sufficient time in examining his patients will be able to make a correct diagnosis in nearly all of the arrhythmias. However, at the present time neither the patient nor the physician will be entirely satisfied without an electrocardiogram for confirmation of the diagnosis and other information which it will reveal.

MECHANISM OF THE HEART BEAT

Special properties of heart muscle are: 1) contractibility: it responds to stimulation by contracting; 2) refractory period: having responded to stimulation by contraction it requires a short interval for recovery during which it will not respond to stimulation; 3) rhythmicity and automaticity, the power to initiate impulses or stimuli with regularity, 4) conductivity: it receives, conducts and transmits impulses.

Normally the impulses arise in the sino-auricular node, a small area of neuromuscular cells high in the right auricle near the orifice of the vena cava. Impulses arising at this site spread radially through the auricle and reach the auriculo-ventricular node and are transmitted on to the Bundle of His which divides into two branches on either side of the septum carrying the impulses to the Purkinje fibers and thence to the ventricular muscle cells.

The sino-auricular node automatically initiates impulses at the rate of 50 to 120 per minute. The auriculo-ventricular node is capable of initiating impulses if the sino-auricular node fails but at a slower rate, usually around 45 beats per minute. If both of these sources of impulse formation fail, lower centers in the bundle or ventricle may continue at even slower rates.

These centers are regulated by two outside nervous influences. The vagus nerve acts to slow heart action. The fibers of the right vagus are mostly distributed to the sino-auricular node while those of the left are mostly to the auriculo-ventricular node and Bundle of His. Sympathetic fibers pass to these structures also and act as accelerators. The balance between these two factors normally adjusts the heart rate and enables the heart to meet the requirements of the bodily needs for varying amounts of blood.

CLASSIFICATION OF THE ARRHYTHMIAS

The arrhythmias may be divided and classified according to the source of their origin as follows:

I. Sino-auricular node—sinus arrhythmias, sinus bradycardia, sino-auricular heart block and cardiac standstill.

II. The auricles: Auricular premature beats or extra systoles, auricular paroxysmal tachycardia, auricular flutter, auricular fibrillation.

III. Auriculo-ventricular node—nodal premature beats; nodal rhythm; nodal tachycardia; A-V heart block; either primary with prolonged P-R intervals or more severe grades of incomplete and complete heart block. Bundle branch block.

IV. Disturbances arising in the ventricles: Ventricular premature beats; ventricular paroxysmal tachycardia, ventricular fibrillation and pulsus alternans.

This discussion will deal with the more common and more important arrhythmias and their management. It must be remembered that some times benign arrhythmias are very important to a sensitive patient and sometimes more serious arrhythmias are ignored by the stoical patient.

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* Presented at the sixty-fourth annual session of the Mid-Sopth Postgraduate Medical Assembly, February 10-13, 1953, Memphis, Tenn.

PREMATURE BEATS

The commonest arrhythmia is due to premature beats. They may arise from a few irritable cells in any area of the heart and are described by the patient as a "flip-flop" in his chest. They occur in normal hearts but are more common in diseased hearts. They may be recognized by auscultation as extrasystoles and more often by the compensatory pause because of refractoriness of the heart muscle being unable to respond immediately to the next impulse. At the pulse the regular beat and premature beat are felt as a single impulse and the pause is noted. Patients will usually notice this phenomenon and complain about dropped beats or slipped beats.

In the absence of organic heart disease, they may be due to tobacco, coffee, emotional stress, active and focal infection, and hypoglycemia. They are noticed more commonly after a busy day when the patient sits down to rest or retires. They tend to disappear with exercise and are much less troublesome during active working hours. Their presence means one or more irritable foci and should lead to a careful search for a possible cause and the elimination of all such possibilities.

In the presence of organic heart disease they are much more significant. Auricular premature beats with mitral stenosis or thyrotoxicosis are forerunners of auricular fibrillation.

Ventricular premature beats in the presence of coronary thrombosis precede ventricular tachycardia. Frequently, they are seen in early congestive failure with hypertension and coronary insufficiency. With digitalis frequent ventricular premature beats and coupled rhythm give notice of digitalis intoxication and the drug should be temporarily stopped and the dose readjusted.

Treatment may not be necessary for occasional unexplained premature beats, unless they are annoying to a sensitive patient. Sedatives may be helpful in functional nervousness. Quinidine, grains III, may be given every 2-4 hours for all types. Procaine amide hydrochloride (pronestyl) in doses of .5 gm. or .25 gm. had been very effective in ventricular types and more recently has had much support in supraventricular types. In general, the treatment should be directed at eliminating the cause if possible and treating only the types associated with organic heart disease that may lead to dangerous ectopic rhythms.

Tachycardias: Sinus tachycardia is mentioned because it may be confused with an ectopic rhythm. Rates may be from 100 to 140 per minute and are regular. Its onset is gradual and it recedes gradually. Vagal stimulation by carotid sinus pressure may reduce the rate somewhat but it returns with release of pressure. Commonly encountered in emotional states, thyrotoxicosis, with strenuous exercise and with infections the treatment should be directed at the cause.

Paroxysmal auricular tachycardia: is an ectopic rhythm, consisting of a series of auricular premature beats which take over the rhythm from the S. A. node. The rate is usually 160 to 180 per minute and the rhythm is regular. The onset is abrupt and may be without known cause or secondary to excitement—or other trigger mechanisms including coffee—Coyale and Ranasta in susceptible individuals. It may be encountered at any age and may occur without any demonstrable evidence of organic heart disease. Inciting causes should be removed just as in the case of premature beats.

Attacks are usually of short duration and require no treatment. They are often the cause of a useless house call. Occasionally they do not end quickly and therapy becomes necessary. Fear and anxiety increase difficulties and it is wise to educate the patient not to become alarmed since these attacks are not dangerous and can be stopped. In older persons and those with organic heart disease a prolonged attack may become dangerous because of coronary insufficiency and angina pectoris or the development of congestive failure.

Treatment by the patient is usually effective with quinidine gr. III and possibly including phenobarbital gr. 1½, to be repeated every two hours until relieved, then every four to six hours for a few days. Usually one or two doses stop the attack.

The persistent case will require the attention of the physician and the following program is suggested:

1. Pressure on the carotid sinus to produce vagal stimulation — feel for the pulsation below the angle of the mandible. Compress backward against the spine for 10 seconds and massage; if not successful try the left side, not both.

2. Listen to the heart while compressing the carotid sinus or watch the pulse.

3. Have the patient hold a deep breath against closed glottis. (Valsalva) — try it with head bent forward.

4. Induce gag reflex or vomiting.
5. Firm pressure downward and backward on eyeballs.
6. If possible get electrocardiogram; rarely this may be ventricular tachycardia.
7. If not successful with the above, try medical measures.

   A. Sedation — hypo. M. S. grs. ¼, sodium seconal, etc.

   B. Quinidine sulphat grs. III q. 2 h., on second day increase dose to grs. VI q. 3 h. There is some cumulative effect. If not successful on this dosage and toxic symptoms of tinnitus, nausea, and vomiting have not occurred, it may be continued to fifth day. Vagal stimulation should be tried occasionally while giving. Electrocardiograms should be made daily. A 25 per cent increase in QRS means toxicity.
   Quinidine: Increases refractory period of auricular muscle. Depresses excitability. Slows the speed of conduction.

   C. Digitalis:

      1. Depresses pace-making function of S. A. node and A-V node by vagal action.
      2. Tends to shorten the refractory period and increases rate by vagal action.
      3. Direct action on heart muscle tends to lengthen refractory period and slows conduction.
      4. Increases power of contraction. Direct action.

      1. Lantoside C. (Cedilanid) rapidly acting glucoside may be given intravenously. In adults 1.6 mgm. (8 cc.). Less in older patients. Noticeable effects in ten minutes. The peak effect in one to two hours. Don't give if patient has been on digitalis. Not used orally, so change next day if oral digitalization is needed.

      2. Digitoxin: Dosage 1.2 mgm. may be given intramuscularly or intravenously or orally. Absorption is same. Intravenous effects noted in four hours. Oral dosage same.

      3. Digoxin (digitalis-lanata) may be given intravenously or orally. Intravenous effect in two hours. Dose 0.5 to 1.0 mgm. Additional oral doses of .25 mgm. may be given every four to six hours until toxic effects are noticed or relief obtained. Total digitalizing dose is 3.5 mgm. Maintenance dose is .25 mgm. daily. Toxic effects pass in twenty-four to forty-eight hours.

   D. Prostigmine methyl sulfate (1:2000) give 1 cc. subcutaneously. If no effect repeat twenty to thirty minutes with 2 cc. Try vagal stimulation. Toxic symptoms are sweating, pallor, nausea, vomiting, diarrhea. Contra-indicated in asthmatics.

   E. Neo-synephrine hydrochloride: 1 per cent solution. 0.2 per cent solution — initial dose 0.25 cc. (0.5 mgms.) Watch blood pressure as it is not indicated in hypertensive. May be given slowly by drip, using 5 mgms. in 10 cc. of normal saline. This is a good drug for hypotensives.

   F. Procaine amide hydrochloride (pronestyl) —Caps 250 mgms. Ampules 10 cc. for intravenous use contains 1 gm. Rapidly absorbed from gastro-intestinal tract and used intravenously only in emergencies. Peak orally in two hours. With intravenous use effects noted while giving. Orally 1 gm. and wait one hour. If no change give .5 gm., then if necessary 5 gm. every two hours, and for maintenance effect .25 to .5 gm. every four to six hours.

   Excellent results in ventricular arrhythmias and some encouraging reports in auricular tachycardia.

   Toxic effects: Anorexia, nausea, vomiting.

   When giving I.V. give slowly—1 cc. (100 mgm.) per minute and watch blood pressure for hypotensive effects.

   Electrocardiogram: Widened QBS (Intraventricular block).

   G. Mecholyl is only mentioned to say that it is dangerous and may produce cardiac arrest. The antidote is atropine sulfate grs. 1/100 intravenously and quick.

The drug of choice at this time is probably quinidine. However, some cases do better with digitalis. The newer drugs deserve further usage and rarely several may be needed to arrest a persistent auricular tachycardia.

Ventricular Tachycardia consists of an almost regular series of ventricular premature beats at the rate of 160-220 per minute. It almost always occurs with organic heart disease and usually among people past the age of 50 years. It may be induced by toxic doses of digitalis and is preceded by numerous beats. It may be a complication of myocardial infarction and may terminate fatally as ventricular fibrillation.

Vagal stimulation measures are not effective. The electrocardiogram is diagnostic with prolonged QRS interval and ventricular type complexes. The rhythm should be looked for and suspected after myocardial infarction. When found, intravenous procaine amide hydrochloride is indicated and may be life-saving. Maintenance oral dosage following control, .5 gm. q. 4 to 6 hours. Quinidine is also effective and should be given in larger doses averaging grains VI every 2 hours for 4 doses then every three hours. Pronestyl is the drug of choice. Very rarely ventricular tachycardia may occur spontaneously in healthy individuals without evidence of organic heart disease.

Auricular flutter is quite similar to auricular tachycardia. The auricular rate averages around 300 per minute and varying degrees of A-V block produce a ventricular rate of 75, 100 or 150. It is usually regular but the block may vary and resemble auricular fibrillation. The condition is quite uncommon and is associated usually with organic heart disease most commonly, mitral stenosis, coronary disease and senile heart disease and thyrotoxicosis.

Vagal pressures are somewhat effective, but the rate rapidly returns to release of pressure. The electrocardiogram may be necessary for diagnosis and to judge the effect of treatment. Occasionally, the auricular beat can be heard to the right of the sternum at the base of the heart. It may be very difficult or impossible to break the abnormal auricular rhythm in some cases. Treatment most successfully used is to digitalize the heart and hope for conversion to auricular fibrillation, then use quinidine sulphate to convert to a normal rhythm. This must be followed by electrocardiographic studies. Quinidine alone may endure a 1:1 rhythm which results in congestive failure. Pronestyl may also be tried for conversion to normal rhythm.

Repeated treatment may be unsuccessful and digitalis should be continued to control ventricular rate.

Auricular fibrillation is one of the most commonly encountered arrhythmias. It is produced by a circus movement or irritable focus in the auricles. The auricular rate is from 400 to 600 per minute and most of these impulses are blocked at the A-V node resulting in a wholly irregular ventricular rhythm with rates of 120-160 in untreated younger patients to 80 to 100 in the aged. It may occur in paroxysms with sudden onset and abrupt termination and if of short duration the patient may be able to report on the irregularity of the rhythm and assist in the diagnosis. In these attacks the onset may cause symptoms of weakness, palpitation, dyspnea and syncope. Repeated attacks usually lead to permanent auricular fibrillation.

Permanent auricular fibrillation. The etiology may be much the same as paroxysmal auricular tachycardia but usually it is expected with mitral stenosis: thyrotoxicosis; severe febrile diseases; and degenerative or senile heart disease. It occurs quite frequently as a complication of myocardial infarction or rapidly developing hypertension among older patients. Vagal stimulation has little or no effect. Exercise increases the heart rate and the irregularity also increases.

There is always a pulse deficit as compared to heart rate because many beats do not rush the pulse. When the ventricular rate is less rapid the diagnosis may be difficult without an electrocardiogram, but careful timing with the finger as a time-marker will usually be convincing. Rapid rates may be confused with auricular flutter or ventricular tachycardia and the electrocardiogram becomes necessary. Tachycardia with auricular fibrillation is mechanically disadvantageous. Much cardiac energy is lost and depending on the state of the heart—congestive failure sets in. Continued fibrillation favors the formation of mitral thrombi in the auricles which are occasionally released producing emboli to the pulmonary or systemic arteries.

This results in a serious problem regarding the attempt to convert the fibrillation to a normal rhythm with release of emboli. There is much more danger if the condition has persisted for some time than if of recent origin. If the decision is made and it is decided to take the risk, the patient and his family should be informed of the possibilities and the situation weighed carefully.

In mitral stenosis and degenerative heart disease it is usually wiser not to attempt conversion. It will certainly recur with mitral stenosis and in senile heart disease with enlarged hearts, there is more danger of emboli and if these occur the patient has less chance of survival.

The ventricular rate can be controlled with digitalis and maintained at a satisfactory rate. If it does not respond to treatment **look for thyrotoxicosis** and if found add iodine or **propylthiouracil.** When it occurs as a complication or myocardial infarction—it is urgent to restore normal rhythm, usually rapid digitalization restores normal rhythm. Quinidine used much the same as in persistent auricular tachycardia is the drug of choice to obtain normal rhythm and after it is obtained a maintenance dose of grs. III, three or four times daily should be continued for several weeks and then gradually reduced.

Nodal-tachycardias are usually the results of over-digitalization. The rate is about 140 per minute and regular. A jugular pulsation is most noticeable because of auricular contraction simultaneously with ventricular contraction. It is treated like ventricular tachycardia.

Heart block may be congenital or the result of organic heart disease usually arteriosclerotic, more rarely syphilis. If the beats are dropped there is complete silence heard over the precordium. Syncope (Stokes-Adams) attacks are encountered when the ventricular rate falls to 15-20 or several beats are dropped. Ephedrine with phenobarbital is a standard prophylactic against these attacks. Isopropyl-norepinephrine (Isuprel) has recently been reported by Nathanson and Miller as an oral prophylactic. It is given sublingually in doses of 15 to 30 mgm. and the effect lasts one to two hours. It may be given intravenously, in dosage of 0.02 mgm..but duration is short, only about 15 minutes.

CONCLUSION

The cardiac arrhythmias are commonly encountered by all physicians. A condensed review of the subject has been given presenting some of the newer methods of treatment and reviewing older standard methods.

Department of Medicine
Wichita Clinic
Wichita, Kansas

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PAN-PACIFIC SURGICAL ASSOCIATION

Doctors are urged to make arangements as soon as possible to attend the Sixth Pan-Pacific Surgical Congress to be held in Honolulu, Hawaii, October 7-18, 1954.

An outstanding program, including sessions in all divisions of surgery and related fields, promises to be of interest to all doctors.

For further information, please write to F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 7, Young Hotel Building, Honolulu, Hawaii.

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The number of qualified candidates applying for admission to medical schools has decreased in recent years, says Dr. Hinsey, dean of Cornell University Medical College. Factors which keep candidates from gaining admission are the limited capacity of our medical schools, poor preparatory training of some students, limited financial means of some candidates and geographic barriers created by states with residency requirements. Since one-third of our states do not have four-year medical schools, in most cases young men and women there have less opportunity for medical education. With prior residence the chief factor in determining where a doctor will practice, this means inadequate medical care for those states.

Increased financial support of medical schools would help eliminate many of these conditions. Medical schools could expand their present facilities, build new schools, offer salaries to attract and hold enough high-grade teachers, build teaching programs incorporating areas of recent progress such as psychiatry, lower tuition costs and offer more scholarships.

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Indoctrinating Medical Assistants as to the importance of good office procedure is a big step in the direction of improved public relations. *Why not* . . . . hold a conference of medical assistants, secretaries and all ancillary workers for their benefit as well as for the benefit of the profession in general? Such conferences could well be held on the county-wide level or the city-wide level, depending on the local situation in each case.

Clinico-Pathological Considerations of the Diseases of the Lungs in the Newborn*

JOHN H. DENT, M.D., and JACK E. STRANGE, M.D.†
New Orleans, La.

EACH YEAR in the United States the number of deaths in infants under the age of one month approximates 78,000. Almost as great a number die *in utero* with the cause of death listed in the nonspecific category of "stillbirth."

A critical study of the causes of death, usually listed for the neonatal period, reveals much to be desired from the standpoint of both the clinician and the pathologist. The implication that the cause of death is due to prematurity and/or atelectasis has been accepted as a satisfactory and adequate explanation all too frequently. In our investigation of over 300 neonatal deaths covering a period of six years, the autopsy findings have justified our previous contention[1] that a more exact anatomic diagnosis of the causes of death will lead in the future to improved methods of diagnosis and treatment resulting in the saving of many lives.

Premature infants comprise approximately 10 per cent of all live births, yet prematurity accounts for well over 50 per cent of deaths in the neonatal group. Prematurity is, of course, never the cause of intra-uterine deaths. Postmortem examination of the premature infant, properly done and correctly interpreted, will establish an acceptable cause of death, aside from prematurity, in a surprisingly high percentage of cases. This presupposes a close cooperation between the clinician and the pathologist in order to correlate the clinical picture with the underlying pathological processes. Once this happy state of affairs is achieved, it must follow that greater diagnostic skill and more effective therapeutic measures will be the result.

One-third of the deaths of the live-born babies occur on the first day of life, and three-fifths occur by the end of the first week. Although the mortality rate of all age groups has been reduced markedly by the application of modern medical care, far greater investigation is necessary to effect a decrease in the hazards of the first few days of life. The South and Southwest have the highest neonatal death rates in the country, with many of these states exceeding well over the national average of 22.2 deaths per 1,000 live births.[2]

Inasmuch as the clinical signs and symptoms of disease or injury in the newborn are most unreliable—whether the infant is mature or premature—a careful and complete postmortem examination is necessary before a correct diagnosis can be determined, even in retrospect. As we have indicated, a true diagnosis is of much more than academic interest. At autopsy, over 50 per cent of our infant deaths were found to be the result of a factor, or factors, unsuspected by the clinician in attendance when the death occurred. Our investigation into the cause of deaths in the fetal and neonatal period has served to clarify some diagnostic problems for the pediatrician as well as to offer the obstetrician data which result in better obstetrical management.

It is the purpose of this paper to discuss the pathological changes of some of the most frequent pulmonary disorders, and to emphasize the clinical and therapeutic implications. In our experience, histologic examination of the lungs alone has indicated the cause of death in 35 per cent of fetuses and infants.

Potter[3] has correlated the histological structure of the lungs of premature infants with their failure to survive. The high cuboidal epithelium of the alveoli, and the loosely woven connective tissue of the septa, effectively separates the capillaries from the life-sustaining oxygen of the potential air spaces. The differentiation of alveoli ducts and alveoli, together with the ingrowth of capillaries exposed to the potential air spaces in the lung, passes the critical period when the infant weighs approximately one thousand grams. At this time, the infant becomes capable of an extra-uterine existence, in that, the lungs may assume some of the vital functions, formerly carried out in the placenta.

On the other hand, the structure of the mature lung is such that an adequate gaseous exchange in the alveoli and the ducts is possible. Histologic examination of the functionally adequate lung parenchyma reveals fundamentally,

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*Presented before the Section on Pediatrics at the eighty fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 11-13, 1953.

†From the Department of Pathology, Tulane Medical School.

intact capillaries in juxtaposition to patent alveoli. Before the infant has taken a single breath, the walls of the alveoli and alveoli ducts lie in relatively close apposition. From observations of numerous lungs, we believe that the aeration of the lungs follows a segmental distribution beginning along the medial and inferior margins of all lobes and later extending deeper into the parenchyma. X-ray studies of the chest of newborn infants up to one week of age usually will reveal incomplete expansion of the lungs in healthy infants, thus emphasizing the fact that a wide margin of safety is present. Even infants severely damaged from anoxia may exist for several hours and show no clinical or pathological evidence of lung expansion, further emphasizing this margin of safety.

Under normal conditions some continuity between the amniotic sac and the respiratory movements of the fetus *in utero* has been observed in many species of animals including man.[4] It is reasonable to suppose that respiratory movements under normal conditions could scarcely occur without drawing at least a small quantity of whatever is in the pharynx into the smaller air passages. Careful histological examination of the lungs in most newborn infants will reveal a small amount of amniotic sac contents present in the form of desquamated epithelial cells, vernix and precipitated protein. Only when a large amount of amniotic débris is present, due to deep respiratory movements, should one consider it evidence of intra-uterine difficulty. The only way to determine quantitatively the extent of aspiration into the lung is by the histologic examination of several sections from all lobes. Simple gross examination of the lungs is not sufficient. It is impossible to differentiate on gross examination of the lungs a primary atelectasis from aspiration of large amounts of amniotic débris or even from a confluent bronchopneumonia. In complicated or prolonged deliveries where the circulation of the infant is embarrassed, premature and deep respiratory efforts will result in the aspiration of greater amounts of amniotic sac contents. The marked vascularity of the lung will result in the absorption[5] of some portion of the water content, leaving a concentrated residue, which, in the mature infant, will contain desquamated epithelial cells, or, in extreme cases of asphyxia, even meconium. The evidence at hand indicates that the aspiration of large amounts of amniotic débris reflects, in a broad sense, the degree of anoxia to which the infant was subjected. It is the anoxia, and not the aspirated amniotic sac contents, which is responsible for subsequent morbidity and mortality. In addition to the degree of anoxia, the clinical picture will depend, in part, on whether or not the amniotic sac contents are infected, as a result of premature rupture of the membranes.

Immediately after the delivery, the clinical condition will depend on the degree of asphyxia. Mild to moderate degrees of asphyxia are manifested only by cyanosis. In a relatively brief period of time, the infant cries vigorously and the cyanosis disappears. The important stimulus to respiratory activity is anoxia, due to interruption of the flow of oxygenated blood from the placenta. Although the respiratory center in the medulla responds to stimulation by carbon dioxide accumulation, moderate to severe degrees of anoxia depress this mechanism. The chemo-receptors in the aortic and carotid bodies are responsive to oxygen lack, and reflexly stimulate the muscles of respiration. This is, in effect, a second line of defense against anoxia. Here again, the degree of anoxia is important, because extreme degrees of oxygen lack will depress this mechanism, to such an extent that the infant takes only an occasional gasp.

Most of these infants require a minimum amount of treatment which consists in aspiration of the nasopharynx and occasionally the trachea in order to establish a patent air-way. In addition, the infant should be placed in an incubator and oxygen administrated. Antibiotics should be given prophylactically for the first twenty-four hours. If an incubator and oxygen are not available, aspiration of the nasopharynx and administration of antibiotics will generally suffice.

In more severely asphyxiated infants, the same therapeutic approach is employed, but in these cases the administration of oxygen may be necessary during the critical period. Tracheal catheterization is not as easy to perform as some might believe, and it is not without a slight amount of danger. The tracheal catheter, properly used, has only one function, and that is to remove mucus or débris from the nasopharynx and trachea. Once this is accomplished, repeated tracheal aspirations are seldom necessary. We do not feel that artificial respiration with a tracheal catheter in place is indicated. If thick tenacious mucus is aspirated from the nasopharynx, in all likelihood, this material is present also in the trachea, and must be removed by tracheal catheter. Once the trachea is emptied and respiratory efforts have started, these infants, apparently, do much better in an atmosphere in which both the oxygen concentration and the humidity are high. The cohesion of the surfaces of the undilated alveoli are, in the main, responsible for the failure of the lung to aerate completely. The use of wetting agents, as aerosol, is a valuable adjunct toward diminishing the cohesion of the alveoli, thus allowing the lung to expand more readily. At present, there is some experimental evidence to indicate that the incorporation of aerealized mucinolytic enzymes such as papaine, to the humidified atmosphere, may prove of value, especially when thick tenacious mucus is present in the nasopharynx and trachea. The mucus-splitting properties of papaine, and the effect of this substance on the respiratory epithelium is being investigated currently at Tulane University School of Medicine. It shows promise of becoming a valuable adjunct in the treatment of asphyxiated infants. As yet, however, the enzyme preparation is not available for general use, and there is the disadvantage that its mucinolytic activity decreases rather rapidly, once it is put into solution.

In general, over-enthusiastic methods of treatment, such as vigorous tactile stimulation of the infant's skin, are apt to accomplish nothing. The use of stimulants such as metrazol, coramin, and lobeline are employed, but frequently with equivocal results. If the carotid body mechanism has been seriously damaged the above drugs are useless.

On the other hand, the narcotized infants may require artificial respiration following delivery. Here again, metrazol, coramin, or lobeline should not be relied upon as direct antidotes to the depressive drugs, but artificial respiration, properly executed, should be employed. We have had no personal experience in the use of nalline[6] in combatting respiratory depression caused by morphine or closely related drugs. Recent reports[7] indicate that it may prove extremely valuable. The differential diagnosis between the narcotized infant and the one who fails to breathe as the result of severe asphyxia is apparent from the clinical history and the appearance of the infant immediately after birth. Within a relatively brief period of time, the severely narcotized infant, if not properly treated, shows signs of severe anoxia. Effective treatment in this condition consists of clearing the air-way of mucus, giving oxygen in relatively high concentration, and maintaining respiratory excursions, using artificial respiration until the drug is metabolized by the infant.

Injudicious attempts to resuscitate infants, whether apneic from anoxia or over sedation, occasionally result in an acute interstitial emphysema and/or pneumothorax. A fatal outcome is likely unless this condition is recognized promptly. Infants who have received artificial resuscitation may fail to improve, or may actually seem to improve, for a brief period of time, following which a marked dyspnea and cyanosis become apparent. The application of positive pressure to a partially expanded lung results in an emphysematous dilatation of the already patent alveoli. If this pressure is increased beyond critical limits there is rupture of the alveolar walls and air is forced into the interstitial tissue of the lung. We believe that the rupture of a considerable number of adjacent alveoli may be responsible for some cases of so-called cystic disease of the lungs. The elastic tissue present in the alveoli walls probably causes a retraction of the ruptured alveoli. Rupture of adjacent alveoli may be responsible for relatively large defects in the parenchyma of the lung. The outgrowth of respiratory epithelium from the terminal bronchiole is well known and we believe that it proliferates and lines these cystic areas, resulting in either single or multiple cyst of the lung. In air bloc, air escapes in the tissue spaces of the lung after the alveoli have been ruptured, dissects its way along the connective tissue sheaths of the large vessels of the lung parenchyma, and appears as numerous sub-pleural blebs. In extreme cases, the air may dissect its way into the mediastinum and eventuate in the soft tissue of the neck. On the other hand, the sub-pleural blebs may rupture and a pneumothorax result, thus seriously impairing the vital capacity of these patients. The early recognition of, and the prompt treatment of pneumothorax may be life-saving. The clinical manifestations of pneumothorax are limited respiratory excursions, dyspnea, and cyanosis. The physical findings may be equivocal. If a tension pneumothorax occurs, a peculiar type of respiratory pattern can be observed. In addition, the diaphragm is displaced downward and the liver may give the erroneous impression of being tremendously enlarged. The diagnosis is established by means of x-ray examination of the chest, or the clinical demonstration of a shifting of the mediastinum. This condition should be suspected in all newborn infants with acute respiratory distress in view of the fact that the prognosis is good if treatment is prompt. As a rule, the simple aspiration of air from the pleural cavity will cause a dramatic improvement in a matter of minutes. The fistulous tract usually closes spontaneously within twelve to twenty-four hours. Rarely it may be necessary continuously to decompress the pleural space during this time. This may be accomplished by inserting a needle into the pleural cavity and connecting it to a rubber tube. The distal end of the tube should be placed under sterile water contained in a jar which in turn is placed well below the level of the incubator. Antibiotics should be given prophylactically.

Since frequently the term atelectasis is employed in the attempt to explain the cause of death, it is important to understand what the term implies. Literally, it means non-expansion of the lungs after birth, or the subsequent collapse of alveoli after they have expanded. Primary atelectasis is present in all stillborn infants and those who die after birth but before respiration is completely established. Certainly, atelectasis is not a cause of intra-uterine death and should not be considered as a primary cause of extra-uterine death.[8] It was pointed out above that a certain amount of primary atelectasis is present even in the healthy infant. Inasmuch as expansion of the lungs is a gradual process, covering several days, small areas of atelectasis when discovered at autopsy, should not be considered significant. Even extensive areas of atélectasis should not be accepted as the primary cause of death, inasmuch as an examination of the cranial contents or histologic examination of the lungs often will reveal an underlying cause.[9] In all likelihood, the effects of atelectasis are additive, and thus responsible for additional anoxia.

A consideration of other pathological conditions of the lungs reveals that the incidence of pulmonary hemorrhage is relatively frequent. Minute pulmonary hemorrhages are present in all infants and subpleural petechiae are common in infants who die of anoxia. Massive hemorrhage, however, is relatively uncommon, and is generally associated with some other disease. Infection, kernicterus, blood transfusions, intracranial hemorrhage, and congenital heart disease are some of the associated findings. Massive pulmonary hemorrhage or hemorrhagic pneumonitis may be found without microscopic evidence of infection. It has been suggested that, in the newborn, pulmonary hemorrhage may be a manifestation of the early stage of pulmonary inflammation. The relationship of pulmonary hemorrhage to kernicterus is not clear, but may depend on the underlying disease such as erythroblastosis, or infection. Pulmonary hemorrhage in the course of any disease, in the newborn, manifests itself by the appearance of blood in the nostrils, and vomiting of blood. The clinical recognition of pulmonary hemorrhage indicates an extremely poor prognosis. Its fairly frequent occurrence in erythroblastosis following exchange transfusion suggests that extreme pulmonary congestion due to overloading of the lesser circulation might be a contributing factor in pulmonary hemorrhage. One should be hesitant in attributing pulmonary hemorrhage to hemorrhagic diseases of the newborn.

In addition to the topics discussed above, we have found bronchopneumonia responsible for a significant number of deaths. It has been mentioned, also, that deep intra-uterine respiratory movements will cause the aspiration of large amounts of amniotic debris. In our experience there is a significant increase in the incidence of bronchopneumonia among both the fetuses and infants who aspirated large amounts of ammiotic débris. Early rupture of the membrane and prolonged labor predispose to the development of bronchopneumonia. The atelectatic and congested lungs are particularly susceptible to the implantation of organisms present in contaminated amniotic fluid. Bronchopneumonia found in the fetus, and that occurring in the first few hours of life certainly had its origin *in utero*. Large confluent areas of the lung may show, microscopically, alveoli filled with neutrophils. On the other hand, the finding of very occasional foci of neutrophils is probably not significant. Clinical behaviour of live-born infants, both mature and premature, who do die with extensive bronchopneumonia is often non-contributory to the diagnosis. They are usually afebrile and the respiratory pattern, as observed clinically, may be within a normal range. Physical examination of the chest more often fails to suggest the diagnosis. X-ray examination of the chest, likewise, is frequently non-contributory. At birth, the clinical condition of the infant may be surprisingly good, whereas, within a relatively short period of time a marked deterioration of vital functions is evident. A shock-like state is apt to ensue, and the infant may expire rapidly from the effect of the toxemia. Occasionally, this condition may be mistaken for intracranial hemorrhage, because of its apparently sudden onset and rapidly fatal termination.

Since the diagnosis of bronchopneumonia in the newborn is extremely difficult to establish and since it occurs relatively frequently, the clinician must have a high index of suspicion in order to treat it effectively. On the basis of the relatively high incidence of bronchopneumonia in our autopsy series, a rational procedure would be to treat all infants prophylactically with broad spectrum antibiotics for twelve to twenty-four hours, it following the delivery, history suggests that the infant might have aspirated amniotic sac contents during the process of a prolonged labor or operative delivery. The diagnosis of bronchopneumonia cannot be made by gross examination of the lungs by the pathologist with any more facility than it can be made by the attending clinician. In general, purulent exudates on the pleural surface do not occur. Again, let us emphasize the fact that histologic examination is necessary to differentiate these lungs from those with an intrapulmonary hyaline membrane, aspiration of excessive amounts of amniotic débris, or massive pulmonary hemorrhage. Microscopic sections should be taken from all lobes since the inflammatory exudate is not uniformly distributed.

The single most important pathological condition responsible for death in our series has been the presence of a hyaline membrane lining the alveoli and alveoli ducts. Considerable interest has been aroused in this important, yet, incompletely understood condition. Potter[9] reports it as the only pathologic change observed in her series in 40 per cent of all infants weighing from 1000 to 2500 grams who died between 1939 and 1949. The clinical and pathologic findings are characteristic. It occurs more frequently in premature than in term infants,[10] never in the stillborn, and more frequently in those delivered by caesarean section than in those delivered by the vaginal route. It is seldom seen in infants who live longer than five to six days.

Characteristically, these infants breathe spontaneously at birth and, for the first hours, seem normal. Breathing gradually becomes labored, with retraction of the ribs and the sternum clearly visible. Cyanosis develops and labored breathing becomes pronounced. Death usually occurs in from twelve to twenty-four hours. At autopsy the lungs have a uniform purplish appearance and are the consistency of liver. However, again, histologic examination is necessary in order to establish the exact diagnosis. Histologically one sees large areas of atelectasis with only a few alveoli and ducts remaining open. These are covered by an irregular layer of an eosin. The source of this material is not known. Although formerly thought to be vernix, fat stains are seldom positive. Although the membranes are usually present in all sections examined they are more numerous in some areas than in others. Occasionally unidentifiable débris or cornified epithelial cells may be entrapped within the membrane. Another feature observed histologically is the apparent thickening of the alveoli septa. This feature is so prominent that some authors have erroneously interpreted it as a congenital interstitial dysplasia. In addition, infants who survive for more than thirty hours are apt to show in their lungs focal collections of neutrophils. We have examined serial sections of lung containing the hyaline membrane and have found them to completely cover the alveoli walls and frequently a greater portion of the corresponding alveoli duct. Thus from its appearance this membrane would seem effectively to prevent the proper exchange of gas in the alveoli. Since the greater portion of the lung is atelectatic, the formation of hyaline membranes in the few dilated alveoli present is responsible for a further degree of anoxia. Potter[3] believes this is a resorption atelectasis; however, we interpret our findings to indicate that a significant portion of these lungs have never expanded. This is in keeping with the gradual expansion of the healthy lung in the newborn. A frequent associated pathologic finding, especially in infants delivered by Caesarean section, has been a marked cerebral edema or a high incidence of intracranial hemorrhage. The relationship of the cerebral edema or intracranial hemorrhage to the development of the hyaline membrane is not clear. It would seem that anoxia, secondary to the asphyxial membrane, certainly contributes to the intracranial trauma.

There is no specific treatment. However, prophylaxis should consist of the avoidance of needless Caesarean sections; the early administration of antibiotics, and the use of oxygen in a highly humidified atmosphere. The use of a detergent mist, such as alavaire, appears to be of distinct value. It is felt that gastric lavage in these infants has been beneficial in order to prevent aspiration of stomach contents into the lung. Feeding should be avoided during the critical respiratory period for the same reason.

SUMMARY AND CONCLUSION

In the course of this paper we have indicated that when properly done, autopsy studies on fetuses and infants will reveal an acceptable cause in approximately 70 per cent of the cases. Since histologic examinations of the lungs alone have revealed the cause of death in approximately 40 per cent of the cases in our series a clinical-pathological consideration of the more common pulmonary disorders was presented. These disorders included asphyxia, with aspiration of excessive amounts of amniotic sac contents, air bloc, and tension pneumothorax, massive pulmonary hemorrhage, atelectasis, bronchopneumonia, and pulmonary hyaline membrane. The salient clinical and pathological features of each entity were discussed in light of the underlying pathological processes.

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1430 Tulane Ave.

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Refrigeration Anesthesia*

CHARLES T. BERRY, M.D., F.A.C.S.
Greenville, Miss.

PRESENTING A BETTER METHOD OF APPLICATION

THE FOLLOWING paper is not to be considered as an original contribution. It is written to present a new and improved method af application of refrigeration anesthesia, together with a review of the literature.

Three hundred years ago the Italian, Severino, suggested the use of ice and snow for surgical anesthesia. Reintroduction of this type of anesthesia is credited to Allen of New York in 1941. Temple Fay is well known for his work and his methods of reduction of the general body temperature. The contribution of Crossman is outstanding as is also that of Massie, Large, and others.

In the beginning of a discussion of refrigeration anesthesia it must be stated that freezing should be avoided. Freezing takes place at 32 degrees F. or 0 degrees centigrade. The limb should be chilled and not frozen. The temperature of a refrigerated limb should not be lowered under 35 degrees F. It is a well-known fact that a limb may be kept submerged in a bucket of ice water for hours with no tourniquet without damage. Water, with no addition of salt, freezes at 32 degrees F. Thus, correctly controlled refrigeration anesthesia can be considered a safe procedure.

Refrigeration produces first a vasoconstriction and later a vasodilatation. This tends to reduce edema and to remove exudates. Analgesia quickly follows refrigeration. This should be emphasized and is a prime factor in the prevention of shock. The patient, free from pain, can then enjoy a good meal before or after surgery. This is of particular importance to the diabetic, in that there is no need of juggling the insulin required, as the patient does not have to miss a meal.

Refrigeration anesthesia, as far as surgical amputation of the extremity is concerned, is designed only for the poor risk patient, who, in the surgeon's opinion, is unable to take a general anesthetic. This roughly includes the severe cardiac patient, old, suffering from arteriosclerotic or diabetic gangrene, thrombosis or embolism requiring amputation, or the severely injured traumatic patient with multiple injuries necessitating early amputation of a severely and hopelessly traumatized extremity. Massie states frankly that under properly controlled refrigeration anesthesia no patient is too poor a surgical risk for needed surgery, as there is no associated shock or pain. Cold relieves pain, eliminates shock, controls edema and inhibits infection while the extremity is at lowered temperature. Refrigeration anesthesia acts on all types of tissue, nerves, blood vessels, muscles, etc., stopping metabolic processes. Cells are put at absolute rest, comparable to hibernation. Heat accelerates necrosis, while cold markedly prolongs the survival time of anemic tissue and markedly lowers the oxygen demand of tissue for survival. Cold abolishes nerve impulses, thus producing anesthesia.

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*Presented before the Section on Surgery at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

Prior to the introduction of refrigeration anesthesia the operative mortality at New York City Hospital for poor risk patients with diabetic or arteriosclerotic gangrene of the lower extremities undergoing amputations was from 55 to 80 per cent. A review of current literature for this type patient undergoing surgical amputation of a lower extremity under refrigeration anesthesia will show an over-all mortality rate of less than 20 per cent. These figures speak for themselves. The advantages of refrigeration anesthesia (in poor risk patients suffering from gangrene and necessitating surgical amputation) are as follows: absence of pain during the following operation, conservation of poorly nourished tissue, a lessening of the danger of spreading thrombosis or embolism, at times allowing a lower and less drastic amputation than would be feasible under any other method, and finally, and most important, avoidance of shock.

Much has been written about the dangers of tourniquet pressure. A narrow soft rubber tourniquet ½ inch in diameter applied one or two turns over the thigh under refrigeration anesthesia will cause no damage. The natural padding of the thigh will in a large measure protect nerves and blood vessels. The tendency is usually to apply a tourniquet too tightly. Refrigeration anesthesia under tourniquet technique permits removal of a limb in a bloodless, shockless, and completely anesthetic field. Allen and his co-workers state and have proved experimentally that tourniquets may be left on for an extended time, as much as five to six hours, under refrigeration anesthesia, without damage to the tissues. Others believe that the tourniquet through local pressure trauma releases unfavorable material which is carried to the wound edges and thus delays healing. There are those who recommend no tourniquet but simply extend the refrigeration time for one to two hours before surgical amputation is performed. The time limit of refrigeration without tourniquet may be extended indefinitely. The time of refrigeration anesthesia under tourniquet technique will vary with the size of the limb, usually three to five hours for the thigh. The tourniquet should be placed at the lowest level permitting a sterile surgical field. No drainage is usually required but drainage can be used in infected cases. Crossman states that he has never encountered vascular damage or thrombosis even in advanced arteriosclerotics from the use of tourniquets under refrigeration anesthesia. The concensus of the majority of surgeons is that a tourniquet is considered necessary for efficiency in amputation under refrigeration anesthesia. The arterial and venous supply to the extremity should be occluded; otherwise, the patient may become chilled, uncomfortable, and the temperature of the extremity will not be properly reduced to render the limb analgesic.

The guiding principle of postoperative management has been to reduce the temperature to whatever extent necessary preoperatively, but to raise it postoperatively as rapidly as safety permits in order to prevent retardation of wound healing. Although, while under the influence of cold, bacterial growth is inhibited, cold also decreases tissue resistance. Thus, when the temperature of refrigerated tissue returns to normal, theoretically, tissues are more susceptible to infection until they regain their normal resistance. Practically speaking, in patients who have an adequate blood supply to the stump, there is no need for postoperative chilling with ice bags, and no obligation to letting the stump return immediately to normal body temperature as soon as possible. Should sloughing of the wound edges occur or if vascular impairment of the stump flaps is obvious, ice packs, or chilling of the stump by other methods is indicated until circulation improves. In severe arteriosclerosis postoperative chilling of the stump is often indicated. Primary wound healing, following amputation under refrigeration, takes place, but at a slower rate. For this reason the skin sutures should not be removed prior to the fifteenth postoperative day.

Refrigeration anesthesia is not indicated for use in ordinary type fractures. It does have value in cases of multiple compound fractures, admitted in shock, with possible internal injuries, concussion, or other types of trauma. When tissue vitality is endangered by mangling, the danger of thrombosis is increased. When operation must be delayed an extremity may be put at rest by refrigeration anesthesia, allowing time to prepare the patient for surgery, for treatment of shock, or associated injuries.

Crossman states that fulminating limb infections threatening life may sometimes be controlled by refrigeration anesthesia. Ferguson reports benefit in a case of gas gangrene under refrigeration. He believes that this was due to the fact that cold inhibits bacterial growth and retards the absorption of toxins, thereby gaining time for antibiotic drug and serum therapy to become effective.

Severe hemorrhage, which must be controlled by tourniquet, may be benefited with refrigeration by extending the tourniquet time, if this becomes necessary. Webster, Woolhouse, and Johnson state that prolonged moderately reduced temperature, say 45 degrees to 60 degrees F., relieves pain, circulatory and nervous disturbances, and lessens the need for amputation in cases of frostbite and trenchfoot.

Alfred Large of Detroit recommends physiological amputation by tourniquet and refrigeration. For example, for diabetic gangrene or arteriosclerosis of foot and leg, the tourniquet is placed just below the knee and the extremity is packed in ice from just above the knee. The ice and tourniquet are well below the proposed amputation site, in this case, the lower one-third of the femur. Hours or possibly days later, when the patient's general condition permits, the amputation is done under spinal or general anesthesia. Large uses no tourniquet at operation, and recommends very short flaps or no flaps at all, to utilize the limited blood supply to the stump. He feels that this method is superior to refrigeration anesthesia of the amputation site for he believes prolonged cooling delays wound healing, diminishes resistance of tissues to bacteria, thus allowing more likelihood of infection. He also believes nerve degeneration follows prolonged cooling of an extremity. He reports 29 amputations by the above method, with two deaths. These deaths occurred several weeks after operation, and were not considered anesthetic deaths. The point that should be emphasized is that with physiologic tourniquet amputation immediate elimination of absorption of toxins is accomplished. In those patients, requiring amputation, who are too poor surgical risks to take a general anesthetic, this method can be combined with refrigeration anesthesia under the two-tourniquet plan; thereby accomplishing physiologic amputation of the part to be sacrificed. Later, when the patient's general condition warrants, amputation under refrigeration anesthesia, using a secondary tourniquet applied at a higher level, can be done.

Severe burns with secondary infection may be benefited by refrigeration anesthesia. A loosely applied layer of vaseline gauze is the only dressing required. If a limb is to be sacrificed the lowest continuous temperature gives the best preservation, but if the limb is to be saved, healing should take place at the highest temperature that will inhibit return of pain and fever. This will usually be from 60 to 70 degrees F. The lower the temperature the more retardation of wound healing may be expected. Irrigate at intervals with chilled saline and replace the vaseline gauze dressing as indicated.

Refrigeration anesthesia for skin grafting is reported by Mock. He applies ice bags to the donor sites for two hours prior to operation. He reports successful anesthesia in 24 cases, with successful grafting in 23 cases.

The mechanical means of refrigeration presented in this paper is best described as a refrigerated boot. It consists of a metal-hinged, elongated box, with an attached refrigerating unit, thermostatically controlled. The temperature can be set to any desired degree above or below freezing, and the machine has thermometer reading controls in Fahrenheit and centigrade. The machine automatically cuts on and off when set a desired temperature reading. The apparatus is safe and convenient for hospital use. It is small enough to be carried about by means of handles and is easily conveyed to the patient's bed. It is mounted on an overbed table, provided with vertical adjustments for any type or size hospital bed. The overbed table is wheeled, allowing for easy transportation of the patient from his room to the operating table, while the patient is still in the apparatus. It is electrically controlled and can be connected to an ordinary 110-volt electric outlet socket. It can be set at any desired degree of temperature, thereby leaving temperature control in the hands of the operating surgeon, or physician in charge. The machine provides a much more comfortable, more sterile, simple, quick, and more efficient way of achieving the desired anesthetizing refrigeration than ice anesthesia or any other refrigerating type unit now available.

The technique recommended with this machine for amputation of a lower extremity is as follows:

The extremity is prepared surgically and wrapped in sterile linen. The limb is placed in the box with the tourniquet in place inside the refrigeration unit, but left loose. The thermostat and temperature controls are set at 35° F. and when this temperature is reached the limb is chilled for 30 minutes. The tourniquet is then tightened and chilling is continued for three to five hours at 35° F. depending on the size of the limb. Amputation can then be accomplished with complete anesthesia and with no discomfort to the patient. This machine has been used in the past 18 months for eleven amputations of the femur and one of the tibia. All patients were very poor surgical risks suffering from arteriosclerotic or diabetic gangrene. Ages ranged from 77 to 93. There was one death on the sixth postoperative day. The physiologic amputation method of Large was successfully employed in one case of diabetic gangrene, the actual amputation being done four days after the gangrenous foot and lower leg had been tied off with a tourniquet and placed in the refrigeration machine at 10° F. We are convinced that particularly with diabetic or severe arteriosclerotic gangrene, or in any extremely poor risk patient in which time is needed for stabilization, the physiologic amputation method of Large is the method of choice. However, we still prefer to perform the actual amputation under secondary tourniquet with refrigeration anesthesia, rather than to employ a general or spinal anesthetic as Large suggests. The refrigerated machine is particularly applicable for the physiologic amputation method. Any desired temperature can be obtained and maintained with ease for days. Simply set the machine at a desired temperature and the work is done. Simple observation from then on is all that is necessary.

With the use of the refrigeration machine complete anesthesia was achieved in all cases. The patients were comfortable preoperatively in the machine. No evidence of shock was noted at operation or postoperatively. No drainage was used. Primary wound healing, though retarded, took place in three cases with no postoperative wound infection. Stitches were removed on the fifteenth to twentieth postoperative day. Antibiotic drugs were used both pre- and postoperatively.

It is interesting to note that one case of diabetic gangrene of the foot was observed and treated in the refrigerating machine for two weeks prior to surgery. As long as the extremity was in the machine at a temperature from 40 to 50° F., the gangrenous lesion of the foot was localized and did not tend to spread. Early, during this interval, the blood sugar was brought under control. The patient's general condition remained good. On removal of the limb from the lowered temperature of the machine for as much as 24 hours the lesion would tend to spread. Since the patient could not live in the machine permanently and after several attempts to remove the limb from the machine had failed, amputation was performed. During the time the patient's limb was in the machine at lowered temperature, she seemed quite comfortable, and complained of no pain.

Prior to the advent of the refrigerated machine 24 cases of amputation under ice anesthesia and tourniquet technique are here reported. These patients were treated at the white King's Daughters Hospital and at the Colored King's Daughters Hospital, Greenville, Mississippi. Ages of the patients ranged from 42 to 93. Twelve of the cases were suffering from arteriosclerotic gangrene of the lower extremity, four from diabetic gangrene, one from thrombosis of the left femoral artery, one from thrombosis of anterior tibial artery, one from thrombosis of the right femoral artery, two from compound fracture of the tibia and fibula with irreparable vascular damage, one from embolism of the right popliteal artery, and two cases of fulminating gas gangrene, both of which proved fatal. These cases date from 1945 through 1951. There were seven deaths in the 24 cases. These seven fatal cases all had complicating factors and were extremely poor risks. Their deaths were in no way caused or hastened by amputation under ice anesthesia. In no instance could any evidence of shock at operation be noted, regardless of the preoperative condition of the patient.

One additional case is of particular interest. An 85-year-old male was admitted to the hospital one hour after being struck by an automobile and receiving bilateral severe compound fractures of the tibia and fibula with gross soft tissue damage. He was admitted in severe shock, unconscious, with gross blood loss, blood pressure O, pulse weak and rapid. The right leg was obviously hopeless, having an inadequate blood supply. A tourniquet was applied at just below knee level and the right lower extremity packed in ice from the knee down. The entire left lower extremity was packed in ice using no tourniquet. Repeated blood transfusions and shock treatment were instituted. Twenty-four hours later a low femoral amputation was done under ice anesthesia on the right side, and the following day an open reduction of the left tibia and fibula under ice anesthesia and tourniquet technique was accomplished, using a Rush intramedullary tibial nail. A long leg cast was applied. Postoperative convalescence was uneventful and without infection. Primary wound healing occurred in the right femur stump. The cast on the left lower extremity was changed three weeks later. There was no infection in the wound. Although delayed union occurred x-rays and clinical examination showed solid bony union with good alignment at the end of one year.

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TO SUMMARIZE

Refrigeration anesthesia is indicated in the poor risk patient demanding surgery, and is indicated medically in severe burns, frostbite, trenchfoot, fulminating infections, and in impending diabetic gangrene and vascular injuries from other sources. The refrigeration machine presently offers a safer, cleaner, more comfortable, more efficient, more sterile method of applying refrigeration anesthesia than by packing in ice, or by the use of other mechanical means now available. It is particularly suited in the use of the physiological amputation method of Large. The use of the refrigeration machine as outlined in this paper is recommended.

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§

Dr. Thomas G. Barnes (Greenville)—I would like to commend Doctor Berry for an excellent presentation of a most important subject. There is not enough stress laid upon this all-important weapon in the treatment of the patients falling within its indications. The refrigeration unit which he has devised not only simplifies and expedites the treatment but is also much more comfortable for the patient, less time-consuming for the attendants and is not as messy and sloppy as the old conventional ice-packing technique. There is only one point that I would like to add in the form of a suggestion. When one is performing an amputation under refrigeration anesthesia it is a good idea to operate in an air-conditioned operating room if at all possible. One should also refrigerate the solutions used in preparing the patient's extremity and, finally, the operating room light should not be turned on until the incision is being made. All of these precautions are taken to insure the extremity of remaining at the optimum low temperature for the anesthesia to be effective.

Again let me say that it has been a distinct honor to discuss this fine paper an to congratulate Doctor Berry upon his excellent results and upon his ingenuity in developing the refrigeration machine.

§

DOCTOR DEPLORES DIET AND HABIT INDISCRETIONS

(The following statistics are pointed up by Dr. Fishbein of the Chicago Board of Health.)

Vital statistics for 1952 point up the large number of deaths due to indiscretions of diet and habit.

"A young person may think he's getting by with it," said Dr. William Fishbein of the Chicago Board of Health, "but it all comes out of his reserve account, unknown to him. When there is no reserve left, he's through."

Heavy drinking and other dietary abuses are underlined in the large number of deaths due to cirrhosis of the liver.

These deaths begin to make their appearance at about age 45.

Heart cases, aggravated by worry and nervous tension, begin making their appearance in the death columns in substantial numbers at about age 30.

Big Enemies Cited

What are the big enemies at your particular age group?

Frank Bauer, chief of the Division of Health and Methods, ranks them in order of frequency of cause of death in 1952:

Age 5-14: Accidents, leukemia.

Age 15-19: Accidents, tuberculosis, leukemia.

Age 20:34: Tuberculosis, heart disease, cancer.

Age 25-29: Accidents, heart disease, tuberculosis, cancer.

Age 30-34: Heart disease, cancer, accidents, tuberculosis.

Age 40-44: Heart disease, cancer, apoplexy (stroke), tuberculosis, accidents.

Age 45-59: Heart disease, cancer, apoplexy, tuberculosis, accidents, cirrhosis of the liver.

Age 50-54: Heart disease, cancer, apoplexy, accidents, tuberculosis, cirrhosis.

Age 55-59: Heart disease, cancer, apoplexy, accidents, cirrhosis, diabetes, tuberculosis.

Age 60-64: Heart disease, cancer, apoplexy, accidents, diabetes, cirrhosis, tuberculosis, nephritis.

Age 65-75: Heart disease, cancer, apoplexy, accidents, diabetes, pneumonia, nephritis.

Age 75-79: Heart disease, cancer, apoplexy, pneumonia, diabetes, nephritis.

Age 80-95: Heart disease, apoplexy, cancer, pneumonia, nephritis, accidents, diabetes.

Many Children

Of the 37,469 deaths in Chicago last year, the astonishing total of 2,191 occurred in children under age 1.

More than half of these infants died in the first three days of life.

"It is clear where we must concentrate our energies," says Dr. Herman N. Bundesen, president of the Board of Health.

"We have virtually eliminated such former childhood scourges as smallpox, scarlet fever and diphtheria. We must wipe out the rest."

For the first time in history last year there were no deaths due to whooping cough.

NEW DRUGS NEW DEVICES NEW DIGESTS

What it is: Bentyl Injection. Each 1 cc. bentyl injection (in sterile sodium chloride solution) contains 10 mg. of bentyl hydrochloride.

Indications: Bentyl is recommended for pylorospasm, spastic constipation, irritable colon, and for rapid relief of cramps resulting from hypermotility of the small and large intestine. Parenteral bentyl therapy is used for acute biliary tract dysfunction, including gall bladder spasm not caused by obstruction.

Bentyl Injection is indicated for use when a rapid onset of action is desired, or when persistent nausea and vomiting preclude oral medication. Clinical relief from gastro-intestinal distress is observed promptly following intramuscular administration.

Dosage: Two cc. (20 mg.) intramuscularly every four to six hours as indicated.

Discussion: Bentyl Injection is usually free from local irritation. There may be a temporary sensation of "lightheadedness", but mydriasis, xerostomia and dysuria are rarely associated with bentyl administration. Bentyl injection therapy should be continued until bentyl capsules or syrup can be taken conveniently by the patient.

Supplied by: The Wm. S. Merrell Company.

§

What it is: Seconesin. Noting the widespread incidence of anxiety tension, Friedlander (H. S.: Medical Times 81:411, 1953) cites mephensin as "one of the most valuable, and probably one of the safest drugs developed" to produce a state of relaxation, euphoria and release from tension in such patients. He reports on the use of a combination of mephenesin (400 mg. per tablet) and secobarbital (30 mg. per tablet), both N.N.R. drugs.

Friedlander found the feeling of relaxation and sedation induced by the combination "more satisfying and complete than could be induced by either drug alone." Patients experienced a marked feeling of well-being with a complete absence of "hangover," and no toxic or undesirable reactions. The quality of daytime relaxation was such as to promote a good night's sleep in most patients without use of a hypnotic. Two tablets t.i.d. were usually given at start of treatment, but later experience showed that smaller dosage sufficed.

Indications: Conditions in which Seconesin produced relaxation and sedation were nervousness, anxiety, tenseness, premenstrual tension, menopausal melancholia, nervous twitching, mental strain, excitability, etc.

Supplied by: Crookes Laboratories, Inc., Mineola, N. Y.

§

What it is: Pro-Derna. An invisible, non-greasry, non-sticky cream containing 52.5 per cent silicone (polymerized methyl siloxanes) in an inert base; 2 to 20 times the silicone content of other skin protective products. Resists water and oil-soluble irritants for hours. Does not interfere with hands in household or industrial work.

Action and Uses: Sets up an occlusive, pliable barrier which protects the skin against the ravages of numerous common skin irritants. Indicated for the prevention of dermatitis due to soap, household cleansers, and water, (infants' eczema, eczema in housewives, physicians and others who must wash frequently); chafing, intertrigo, chapping, fissures, etc.; dermatitis due to urine, saliva, rectal and vaginal discharge (diaper rash, pruritus ani et vulvae, etc.); dermatitis following surgery (skin irritated by drainage from colostomies, fistulas, etc.); industrial dermatitis caused by cutting oils, coolants, acids, alkalis, paints, etc.

Who Makes It: Westwood Pharmaceuticals.

§

What it is: Paveril Phosphate with Amytal — the combination of a sedative with its drug for relaxing smooth muscle spasm, including that of the blood vessels.

What it's for: Nervous tension and episodes of smooth muscle spasm in the blood vessels, particularly those associated with coronary occlusion, angina pectoris, peripheral and pulmonary embolism, and peripheral vascular disease.

Nervous tension may precipitate an attack of angina, and the angina adds to the excitement and tension to further aggravate the angina. 'Paveril Phosphate' with 'Amytal' can be used to interrupt this pathological cycle.

Dosage: The average dosage is 1 tablet three or four times daily.

Who Makes It: Eli Lilly.

§

PEDIATRICS

ABSTRACT FROM PEDIATRIC LITERATURE

Harvey F. Garrison, M.D.

Latent Hemolytic Disease of the Newborn Infant. The Variable Quantitative Relationship Between the Amount of Maternal Rh Antibodies and the Extent of Damage to the Rh-Positive Infant. Joseph Grundorfer, Newark, N. J. J. Pediat. 40:172-79, February, 1952.

Occasionally a mother with pronounced laboratory evidence of Rh sensitization may give birth to an infant with a positive Coombs test and anti-Rh antibodies in the circulation but who is not anemic or jaundiced and who in the immediate postnatal period appears clinically unaffected by erythroblastosis fetalis. Three such cases are described from the author's experience. Severe isoimmunization of the mother does not necessarily result in severe or fatal disease in the offspring. One must assume that the changes which take place when maternal antibodies reach the fetus close to the time of birth are negligible.

(Continued on page 61)

BOOK SECTION

Atlas of Rush Pin Technics

LESLIE V. RUSH, M. D.
Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

This is the first of a series of monthly installments to be published in THE MISSISSIPPI DOCTOR during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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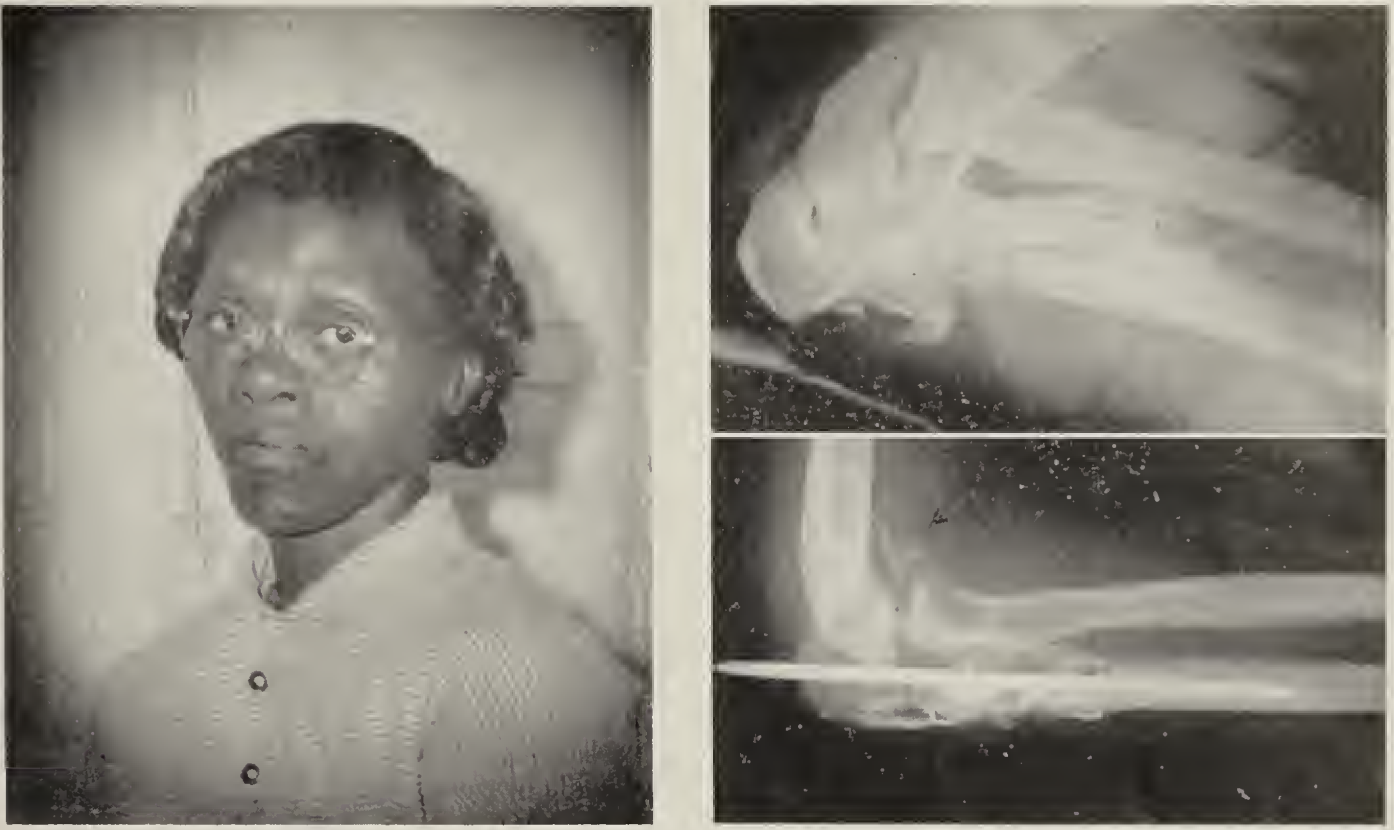


Katie Belle Rembert, believed to be the first American case of intramedullary pinning (1936) (Rush, L. V. and Rush, H. L., Am. J. Surg., 38: 332-333, 1937)

1

THE PIN STORY

IN THE beginning (1927) the fracture surgeon enjoyed a position not too unlike that of the hospital up-keep man. Rarely did he enjoy the privilege of performing in the sterile operating room.

Plaster of paris, ropes and pulleys and a multitude of splints and contraptions constituted his armamentarium. And the patient was reconciled to a long period of invalidism, the wearing of cumbersome and uncomfortable apparatus and the probability of residual deformity and loss of function.

Textbooks and periodicals added their share to the confusion by the description of multiple procedures and appliances for the repair of each individual fracture so that it was impossible for the surgeon to be aware of all the procedures which were recommended for the case at hand.

The Renaissance, in our experience, came in 1936. Katie Belle Rembert of Bellamy, Alabama, presented the problem which precipitated our work on intramedullary fixation. We believe her to be the first American case in which a steel pin was used axially in the medullary cavity to transfix a fracture or to bridge a long bone defect.

Katie Belle had suffered a very extensive Monteggia fracture. The proximal end of the ulna was extremely comminuted with marked anterior dislocation of the head of the radius. There existed at that time no satisfactory treatment for such an injury. It thus became necessary to devise an operation for the purpose.

In this operation a Steinmann pin was introduced axially through the olecranon process of the ulna. Then, disregarding the comminuted fragments in the shaft defect of more than two inches, the pin was driven down the medullary cavity of the shaft of the ulna. The result was astounding. The head of the radius was stable in its proper position. Despite the comminution, the olecranon and shaft of the ulna were held firmly in their proper relationship. There remained only the necessity of filling in the bone defect by wiring the fragments about the pin.

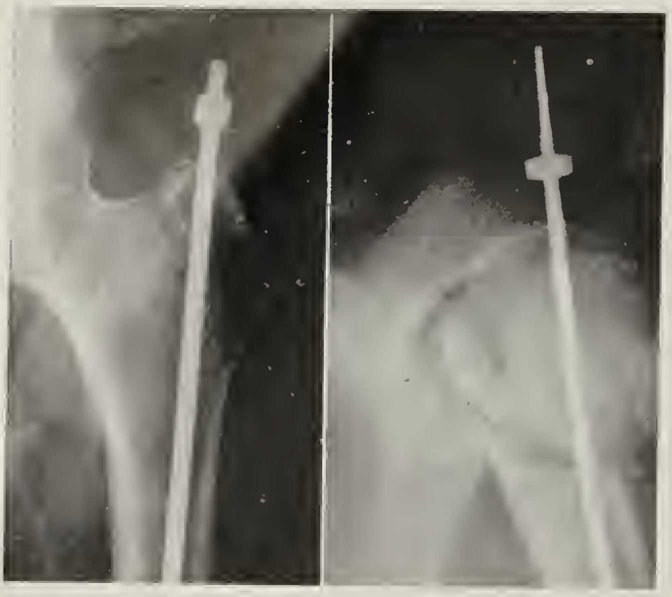
So impressed were we by this experience, the technic was reported in the *American Journal of Surgery* in 1937 and presented before the Southern Medical Association the same year. A second report in the *Journal of Bone and Joint Surgery* in 1939 called attention to the possibilities of the principle in the upper shaft of the femur and recorded a case, describing a new pin for this purpose.

This was a modified Steinmann pin with a collar at its proximal end to prevent migration into the bone. It was used successfully in the ulna, femur and humerus. At that time the concept was limited to straight rigid rods which could be introduced through the end of a bone. This limited its field of usefulness. In the ulna and humerus the head of the pin remained external to the skin, necessitating its early removal because of irritation and danger of infection. In the femur the end of the rod projecting into the soft tissues tended to cause the formation of a bony cap or a large bursa. At this time Kirschner wires were used to fix the clavicle.

Other Workers

In 1940 Kuentscher presented his epochal work before the German Surgical Society. In this country attention was indirectly called to his work by a news article in *Time* magazine in 1942. It was reported that certain American soldiers returned from Germany with steel rods lengthwise in their thigh bones. The methods of Kuentscher, while complicated and elaborate, did much to popularize the procedure in Europe and later in this country, and to expand its field of usefulness.

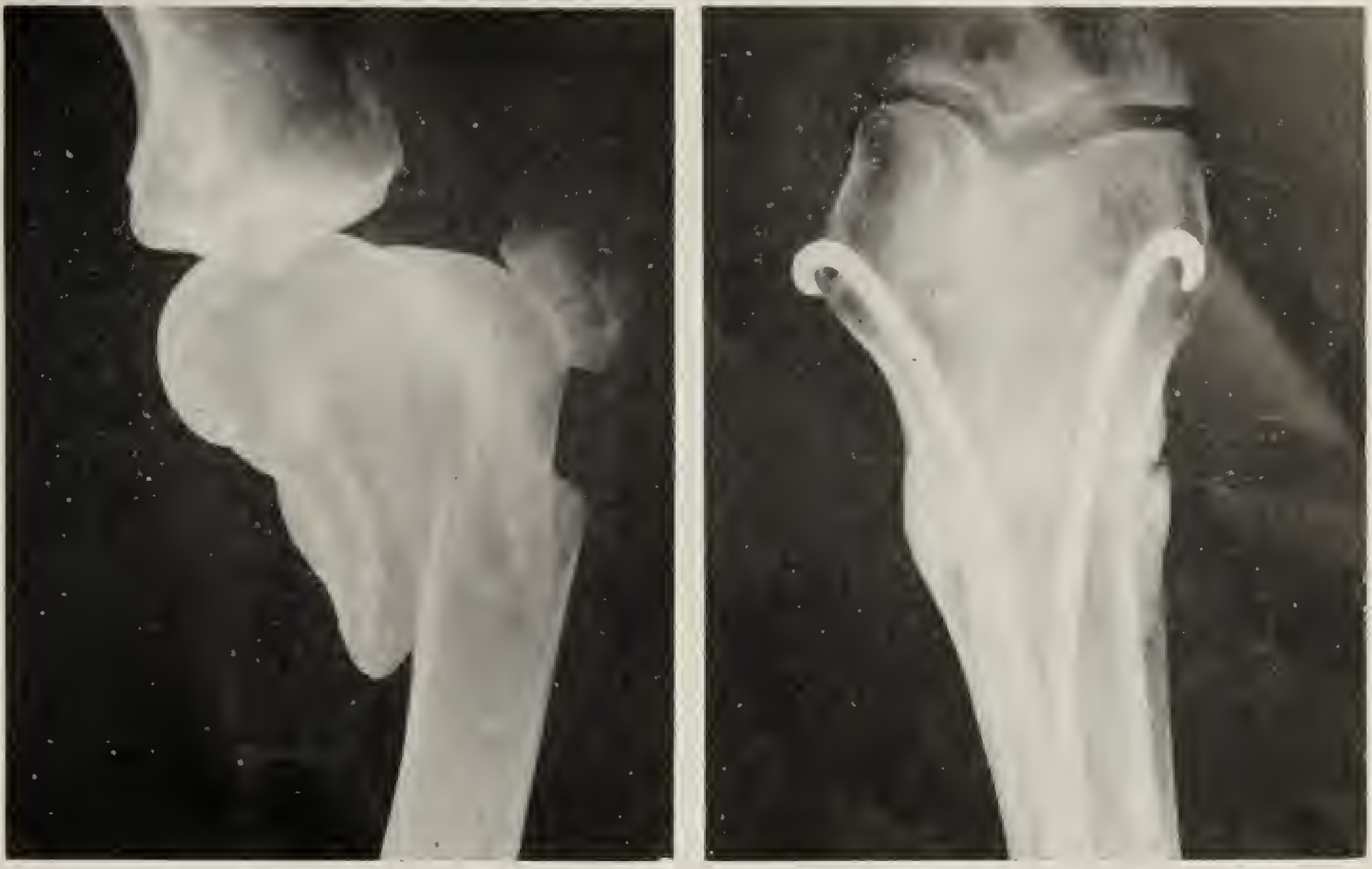
In 1947 Dana Street of Memphis, with Hansen and Brewer, devised the Hansen-



Early pins—1938. (Rush, L. V. and Rush, H. L., *J. Bone and Joint Surg.*, 21: 619-626, 1939).

Dr. A. Lambotte

Below
Dr. Dana Street



Supracondylar fracture of the femur before and after fixation with pins of present design (Rush, L. V., and Rush, H. L. MISSISSIPPI DOCTOR 27: 260-267, 1949)

Street nail, and subsequently became an outstanding American pioneer who has contributed much to this field.

The literature now shows that many attempts were made to use wires and screws axially in bones prior to 1936, the earliest conspicuous work being that of Lambotte of Belgium in 1907. The real credit, it appears, should go to Hey Groves of England who in 1918 actually used a metal rod of considerable length to fix the proximal shaft of a femur.

The Rush pin, as it is now known, was finally perfected in 1948 after many years of research and experimentation. The problem was one of design, metallurgy, and operative technic.

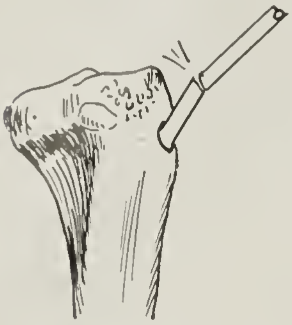
The lower third of the femur was forbidden territory for medullary "nailing", it being pointed out by all workers that a medullary nail driven down from above would not stabilize the lower fragment, because it was short and trumpet-shaped. We felt then, that if this supracondylar fracture of the femur could be conquered it would be the key to most all fractures of all long bones, even those near joints. This eventually proved to be true, but not until after many trials and tribulations.

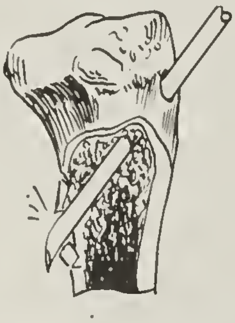
Designing the Pin

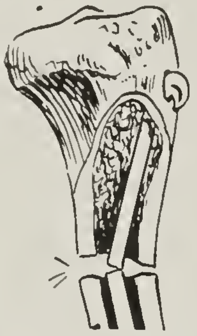
The large rigid *nail* irregular in cross section was eliminated. It could not "turn a corner", was not flexible or resilient and could not be guided. It must enter the bone from the side, through the lateral wall of the condyle, turn the corner and "head north" into the medullary cavity of the femoral shaft.

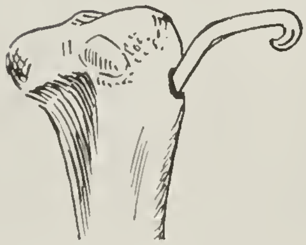
METALLURGY

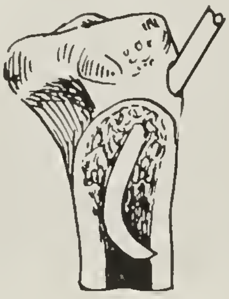
This became the paramount problem. Vitallium was unsuited because of brittleness. 18-8SMo stainless steel (now referred to as type 316 or 18-12 stainless steel) had to be abandoned for two years because it was too soft for driving or stability. To secure optimum temper it was necessary to use type 410 and type 431 stainless

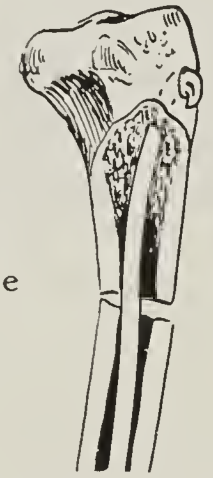


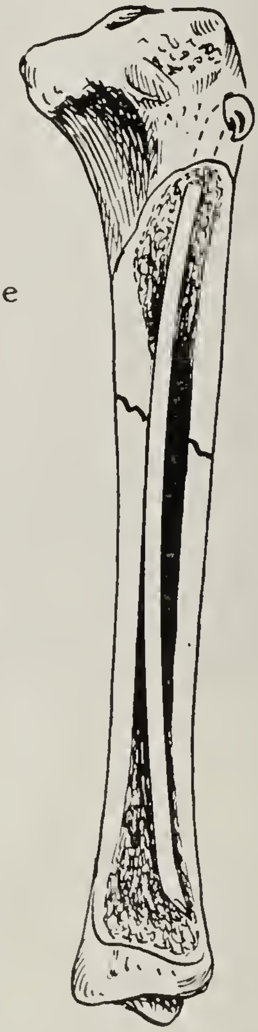












Redrawn from *Dynamic Factors in Medullary Pinning of Fractures.* Rush, L. V., *Amer. Surg.,* Vol. XVII, No. 9, 803-808, 1951.

steels both of which are Martensitic alloys, are magnetic, electrolytic and subject to corrosion. These pins had to be removed on four occasions because of rust granuloma. Fortunately, by this time optimum tempers for rods of various diameters had been determined clinically.

Influence of Temper

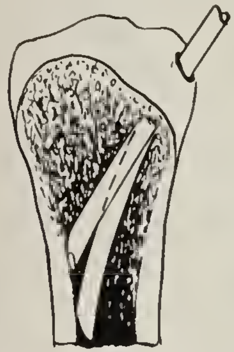
It has now been found possible, by cold working to bring type 316 stainless steel to this optimum clinical temper. But it must be pointed out that we have found ordinary warehouse stock completely unsuitable and the Rockwell hardness test to be unreliable from a clinical standpoint. The real test of optimum temper must be made manually and surgically, and many rods meeting mill specifications must be rejected from a standpoint of surgical safety.

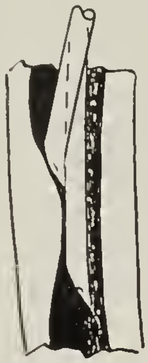
If the rod is *too soft* it will bend on driving or bend within the bone in such fashion that it will not drive or give stable fixation.

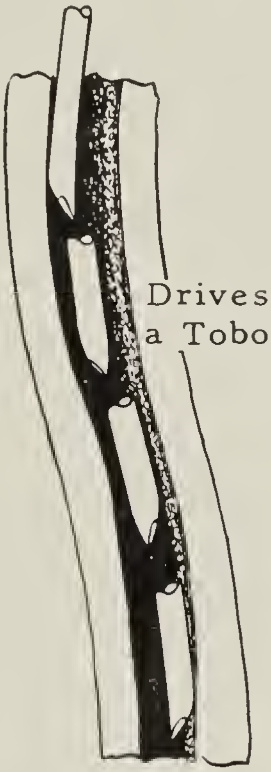
If the rod is *too hard* it may fracture in driving, fracture within the bone at the fracture site, split the bone on driving, or penetrate the cortex and pass into the soft tissues instead of being deflected down the medullary cavity.

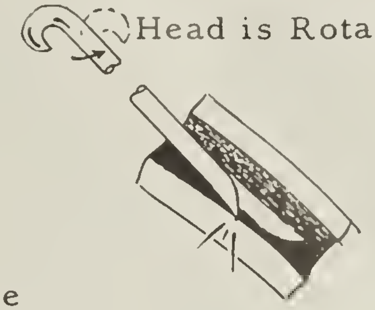
Optimum temper means the rod is rigid enough for driving and stability of fixation, that it is flexible enough to be deflected down the medullary cavity and to conform to the contour of the bone, yet resilient enough to realign itself within the bone. This will be more thoroughly covered in the chapter on dynamics.

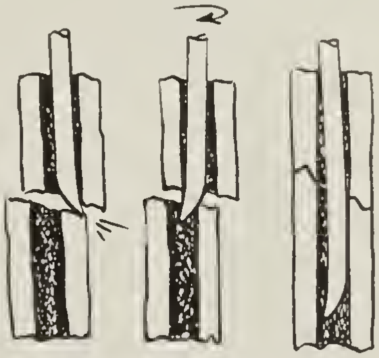
POINT FEATURES

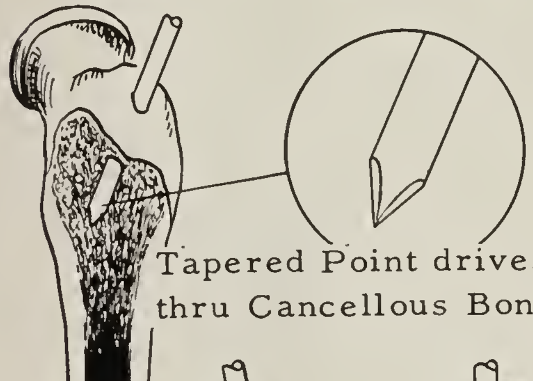

Deflects from Cortex

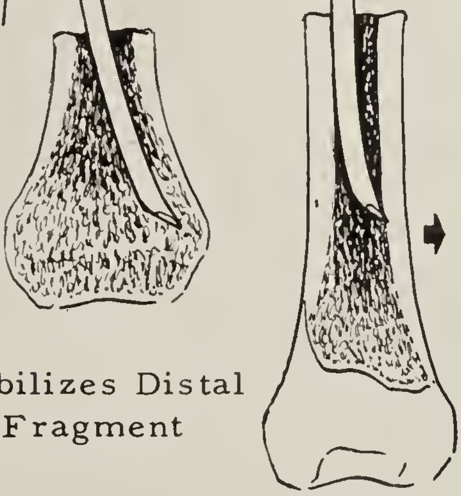

Rides over Obstructions


Drives like a Toboggan


Guides Point when Head is Rotated


Guides across Fracture Line


Tapered Point drives thru Cancellous Bone


Stabilizes Distal Fragment

Redrawn from *Evolution of Medullary Fixation of Fractures by the Longitudinal Pin.* Rush, L. V. and Rush, H. L., *Amer. J. of Surg.* LXXVIII 3: 324: 333 Sept. 1949.

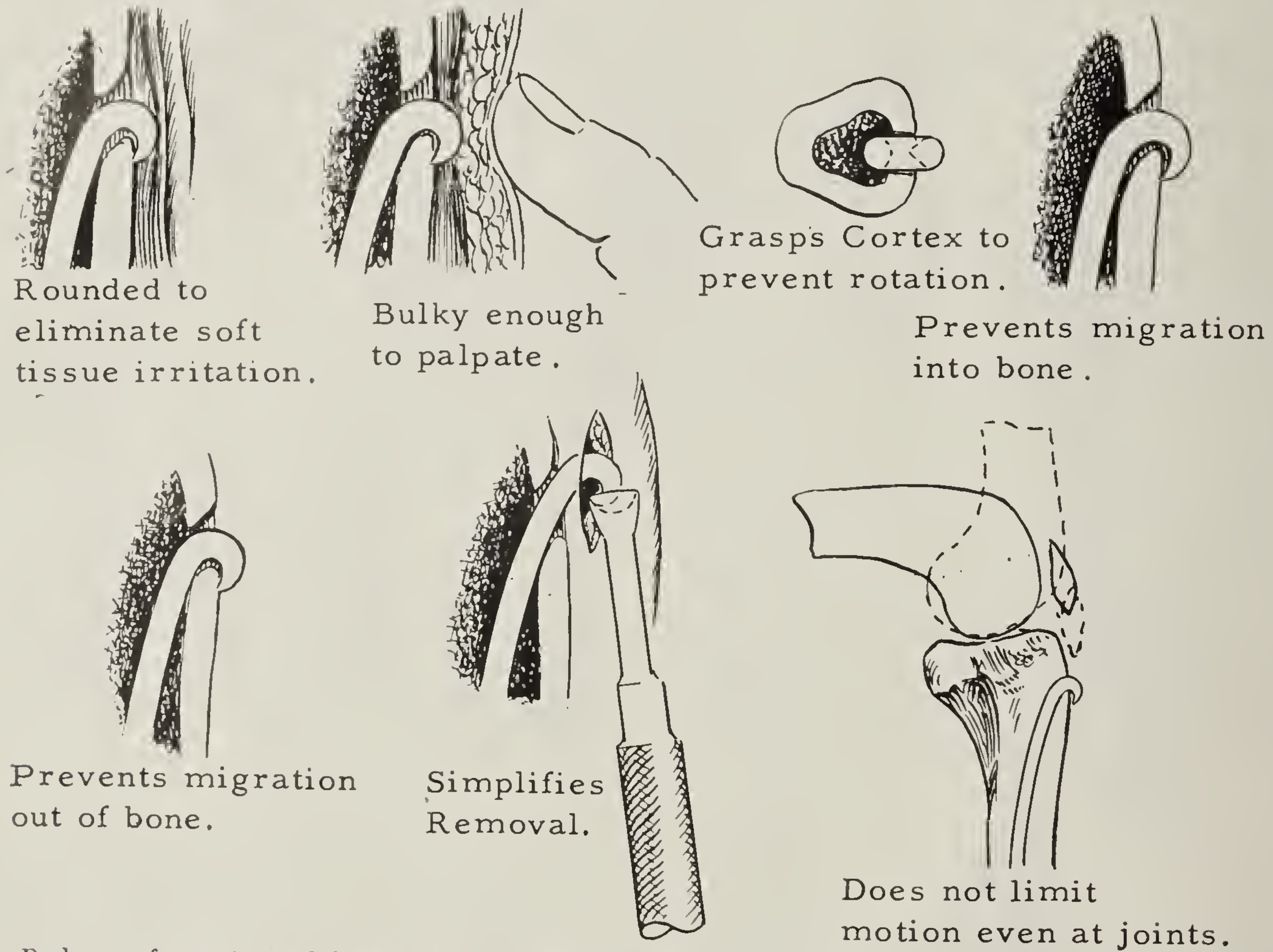
Designing the Point

Many shapes were tried and abandoned. The diamond point would hang up or penetrate the cortex rather than be deflected into the marrow cavity. Blunt or rounded points acted similarly and would not drive through cancellous bone in young adults.

The sled-runner point met the requirements well. The curved single gliding surface deflected the point from the far cortex of the bone into the medullary cavity. It rode over obstructions in the canal which would impinge points of other types. The flat surface would be observed to ride the inner contour of the bone like a toboggan on a runway, the deflection of the point causing the pin to rotate as it was driven in such fashion that the pin tended to guide itself by rotating in this manner. It was further learned that if the point showed a tendency to impinge, simple rotation of the pin with pliers would free it and start it on its proper way, and that it could be guided into an offset distal fragment in this manner.

By tapering the point on each side it drove better through cancellous bone. And the point could be driven obliquely into the distal cancellous bone or set against the cortex in such manner as to control or limit rotation.

THE HOOKED HEAD


Rounded to eliminate soft tissue irritation.
Bulky enough to palpate.
Grasps Cortex to prevent rotation.
Prevents migration into bone.
Prevents migration out of bone.
Simplifies Removal.
Does not limit motion even at joints.

Redrawn from *A Medullary Fracture Pin for Spring Type Fixation: as Applied to the Femur.* Rush, L. V. and Rush, H. L., *Mississippi Doctor,* Vol. 27 4: 119-126, Sept. 1949.

Designing the Head

In fixing the supracondylar femoral fracture a hooked head was constructed to grasp the cortex primarily to prevent migration of the pin into the bone. Since it was placed superficially just beneath the skin the hook was rounded and smoothed to prevent irritation of the soft tissues.

It was later observed that the pin should always be introduced through the side of a bone and almost never through the bone end. By so doing the pin secured a stable hold on the condylar fragment because entering the bone obliquely and being deflected, it was locked by three-point pressure; and as the hook grasped the cortex the pin could not rotate in this fragment. Futhermore, migration of the pin outward was limited by the hook in the lateral cortex. The hook proved of inestimable value in removing the pin.

Then came a large series of operative experiments to determine the proper lengths and diameters for the pins for the various bones of the body. These clinical experiences revealed many dynamic forces previously unrecognized by us, which contributed greatly to the utilization of the principle. It was found that most fractures in all regions of the long bones could be happily fixed in this manner.

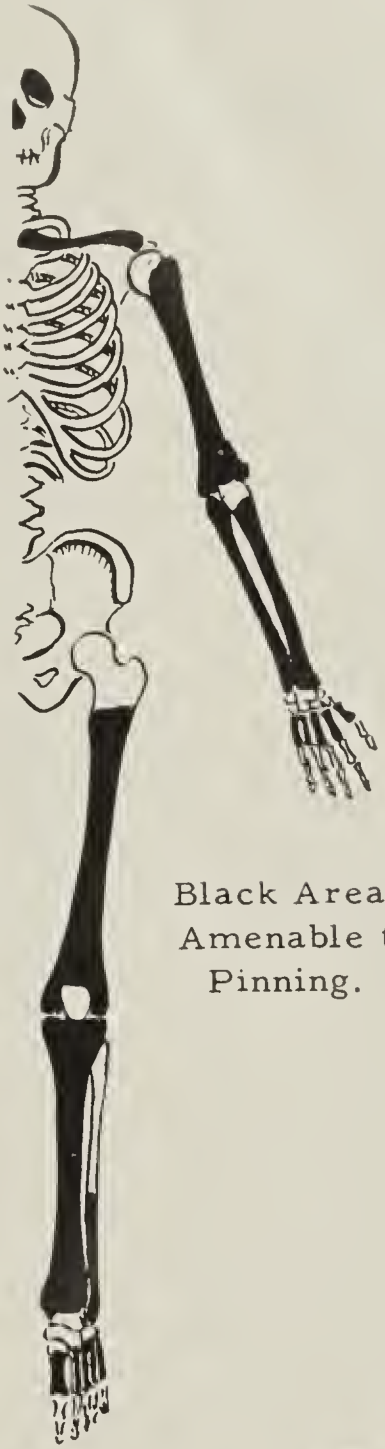
Our errors and disappointments have been many, our gratification has been great. It is these experiences gained in over 550 operations of this type which it is the purpose of this book to convey.

2

INDICATIONS FOR PINNING

THE FRACTURED extremity presents its own intrinsic forces of muscle pull to produce overlap and angulation. These forces are continuous. The surgeon by instituting intelligent engineering principles can resist these forces in all long bones, even at or near joints to secure stable fixation and early function.

Pinning is less formidable for the patient and the surgeon than marrow nailing. The greater the experience of the surgeon in pinning technics, the broader becomes its field of application.



Black Areas-
Amenable to
Pinning.

General Indications

CHILDREN: On rare occasions when the deformity warrants surgical interference.

AGED PATIENTS: Almost routinely because most fractures can be pinned by closed or semi-open procedures with minimum trauma and shock.

FRESH COMPOUND FRACTURES: Almost routinely as an immediate procedure. Immobilization of the bone lessens the spread of infection. The pin is well tolerated in the presence of infection. Pinning is delayed only in the simplest compound wounds or when the condition of the patient will not permit surgical interference.

COMPOUND, LONG OBLIQUE, AND SPIRAL FRACTURES: When combined with circular wires. Such fixation is usually stable.

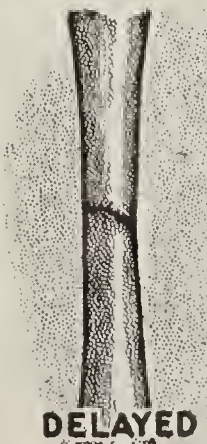
DELAYED UNION: Healing is encouraged by correction of existing angulation and by the force of the muscle pull because the bone can telescope freely upon the pin to cause compression of the bone ends.

NON-UNION: Stable fixation is usually obtained for graft at the same time permitting active function.

MAL-UNION: Even near joints.

COMPOUND FRACTURE

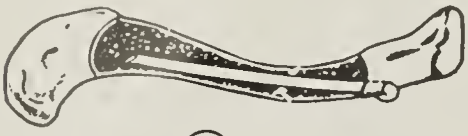
COMMINUTED



DELAYED UNION

NON UNION

MAL-UNION



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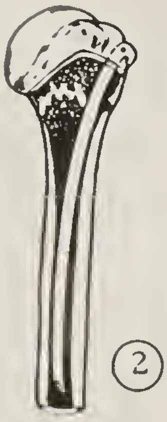

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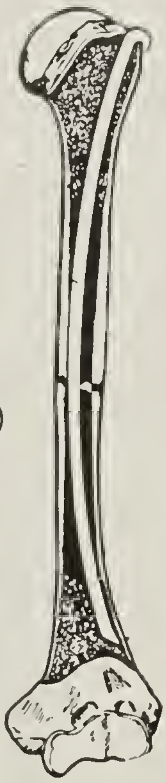

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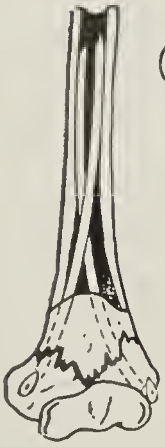

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Upper Extremity Fractures

1. Clavicle: Pinning is desirable in adults, particularly males. Patient is more comfortable, is permitted early function, and possibilities of deformity are greatly reduced.

2. Neck and Humerus: Almost routinely, particularly in the aged where pinning can usually be carried out as a closed procedure.

Head and Neck of Humerus (Comminuted): Closed pinning usually gives best results.

3. Shaft of Humerus: Routine in adults (semi-open).

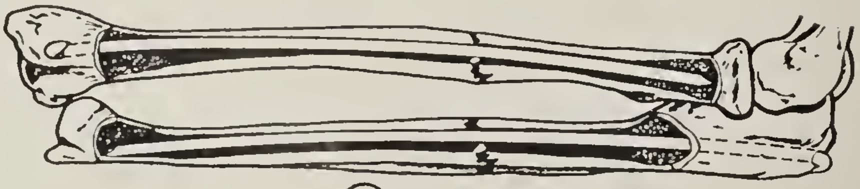
4. Condyles of Humerus: Whenever the deformity warrants surgical interference (open).

Olecranon of Ulna: Double pinning routinely (open).

5. Radius and Ulna Shafts: Almost routinely in adults. Open or semi-open reduction.

6. Colles: Almost routinely in adults, particularly in the aged. Closed, immediate function.

7. Metacarpals and Fingers in Adults: When deformity warrants. Usually closed. Especially indicated in compound fractures.



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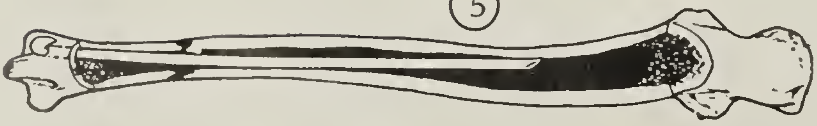

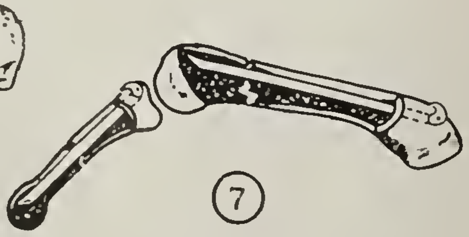

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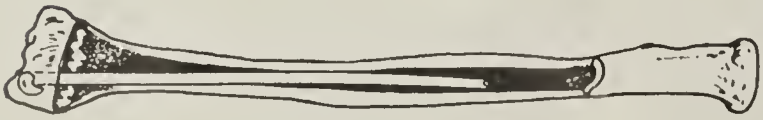

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Lower Extremity Fractures

1. SHAFT OF FEMUR, UPPER THREE-FOURTHS: Semi-open, routinely. Single pin driven down from the trochanter. Contra-indicated in trochanteric region.

2. SHAFT OF FEMUR, LOWER ONE-FOURTH: Routinely. Usually closed. Double pins driven upward from the condyles.

3. TIBIA, UPPER THIRD: Usually closed. Almost routine. Double pins driven downward from the condyles.

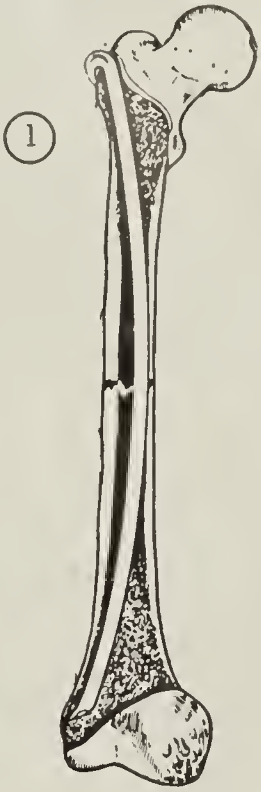
4. TIBIA, MID-HALF: Single curved pin driven down from above the tubercle. Closed or semi-open. Routinely.

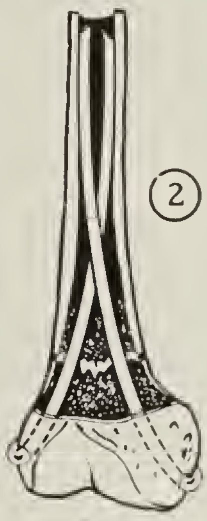
5. TIBIA, LOWER THIRD: Single pin driven upward from just above malleolus. May be combined with pin driven down from above.

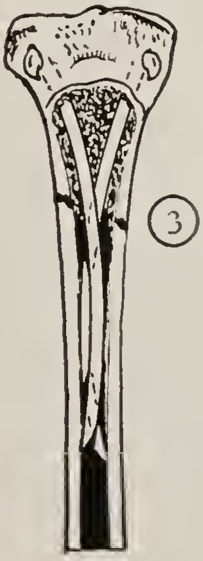
6. ANKLE:

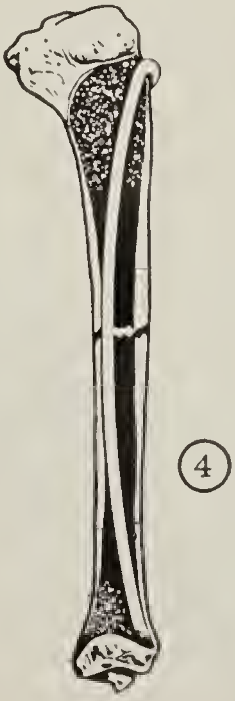
INTERNAL MALLEOLUS TIBIA: Single or double pins. Open reduction. Routine in adults.

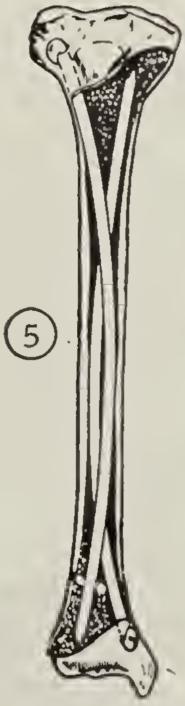
LOWER FIBULA: Occasionally indicated. Single pin driven upward from external malleolus or pin driven obliquely through fibula into lower end of tibia.

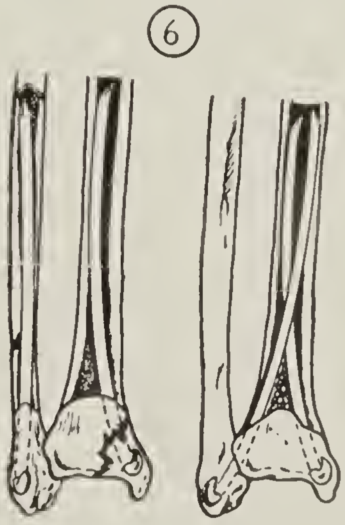


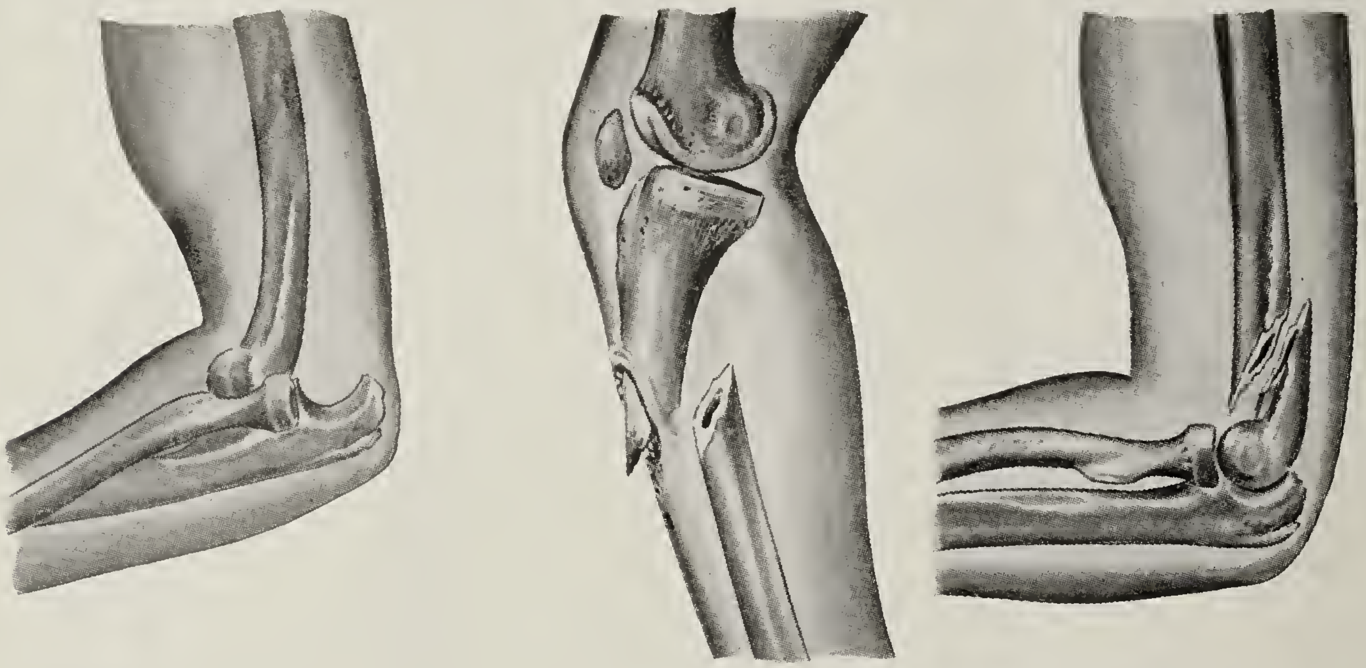












Dislocations, compound fractures, and elbow fractures indicate immediate surgical care.

THE TEMPORARY TREATMENT OF FRACTURES

FRACTURE TREATMENT need no longer be surgical drudgery. It can often be made both leisurely and definitive. Clear cut precisional surgery, done electively, can prove both to the patient's advantage and to eliminate to a large degree the need for emergency procedures which are so often inconvenient and distasteful to the surgeon himself.

In most well-organized hospital staffs at least one surgeon, well qualified by training and experience, should be responsible for the definitive fracture treatment, if the patient is to avoid unnecessary deformity, loss of function or prolonged invalidism. It is necessary that this surgeon have a thorough knowledge of the anatomy and physiology of the extremity and a talent for surgical mechanics. It is assumed and hoped that the pinning of bones will not be undertaken by those of lesser qualifications.

All dislocations are emergencies. All compound fractures are emergencies. Most all elbow fractures are emergencies. These injuries should be recognized by the members of a hospital staff as emergencies and should be seen by the fracture surgeon himself immediately.

The existence of the fracture surgeon will be a miserable one if he is personally called upon for the emergency care of all fracture cases. Practically all fracture cases are emergencies, but mostly for temporary treatment only. A cooperative hospital staff can relieve him to a large degree of this burden if they become proficient in a few fundamental methods of temporary fracture treatment.

Routine Treatment

CLAVICLE AND SHOULDER: Simple recumbency in bed is excellent emergency treatment.

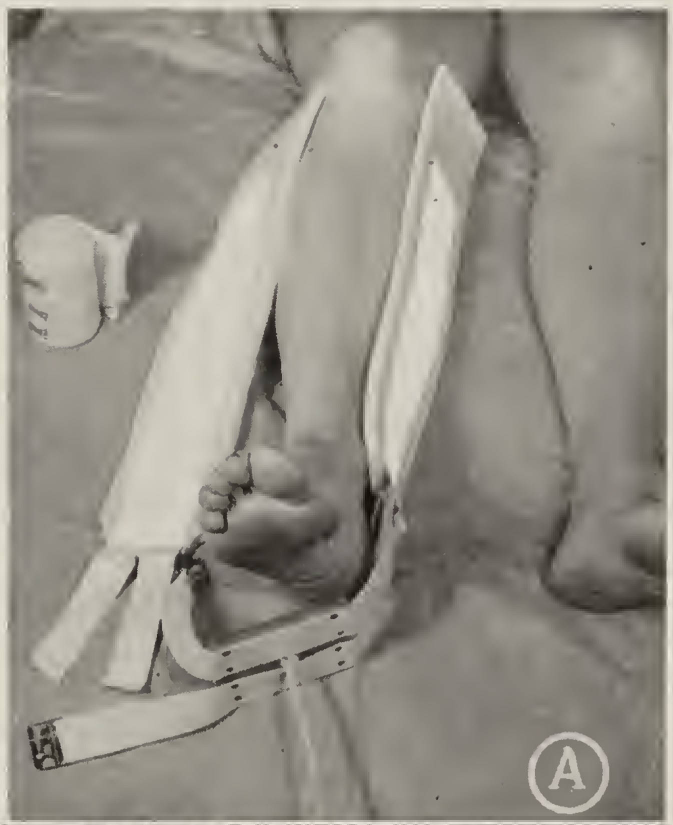
UPPER EXTREMITY: The *K. E. S.* dressing, described below, is excellent temporary fixation.

FEMUR AND KNEE: Modified Buck's extension with knee moderately flexed is adequate.

KNEE, LOWER LEG, ANKLE AND FOOT: *K. E. S.* dressing excellent. The pillow splint has definite indication as very temporary expedient.

Simple recumbency excellent for shoulder and clavicle injuries.

Modified Buck's Extension

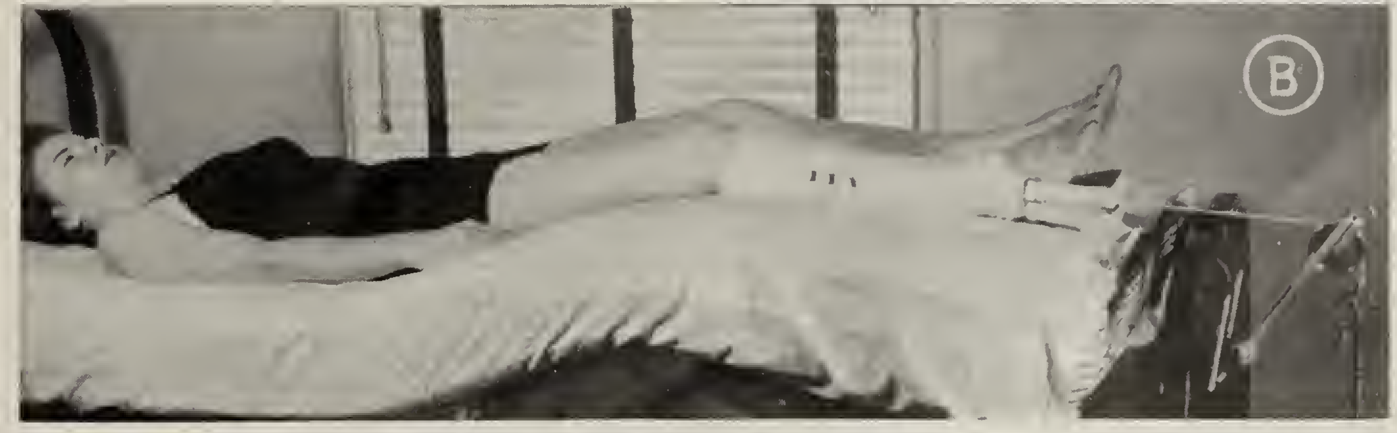


This type traction can be applied by a nurse or orderly. Adhesive is not applied directly to the skin.

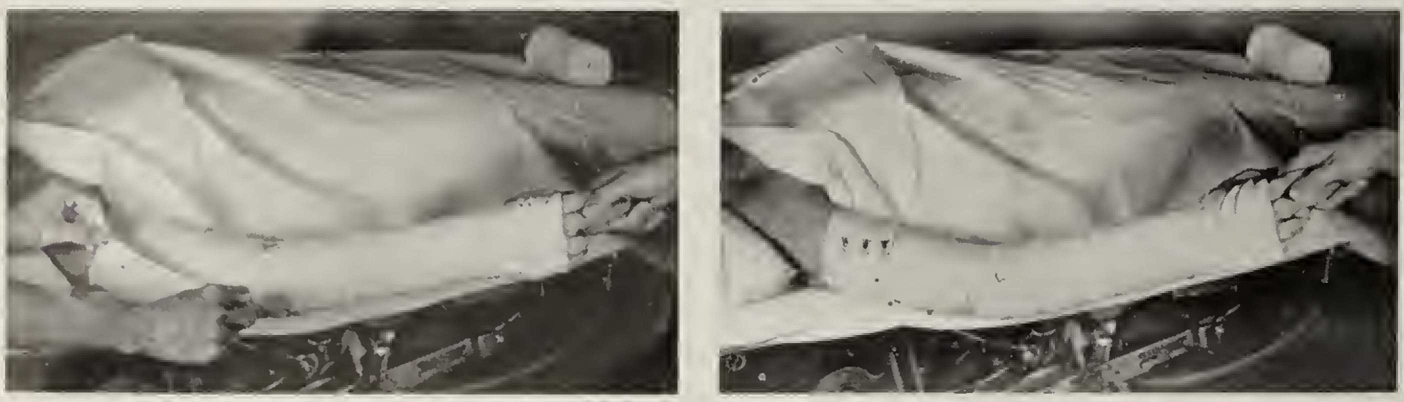
Strips of adhesive, two inches wide, are applied to strips of foam rubber. These foam rubber strips are three inches wide, one-eighth or one-fourth inch thick and long enough to extend from the knee to the ankle.

The adhesive strip extends eight inches below the rubber strip, is turned back upon itself and split lengthwise to fashion two straps to be attached to the wood spreader at the foot.

The spreader is equipped with web straps with two buckles on each side to receive the adhesive straps. The foam rubber strips are applied laterally to the leg with turns of elastic bandage.



Such a dressing is comfortable to the patient and causes practically no skin irritation. The foam rubber is sufficiently adhesive to the skin to withstand eight pounds of traction satisfactorily.



Splinting forearm with plaster splints and elastic dressing. Note traction on index and middle fingers, elbow slightly flexed.

The K E S Dressing

As a temporary dressing to an extremity both before and after surgery, the K E S has been found both more convenient and to be far superior to the plaster cast in most instances. It has the advantage of being a compression dressing, gives good immobilization and is much simpler to apply and to remove than a plaster cast. Being elastic the dressing will stretch to allow for swelling and tends to become snug again as the swelling recedes. It is comfortable to wear and pressure sores are of rare occurrence.

The name is an abbreviation for the materials of which it is constructed.

Kerlix* gauze
Elastic bandage
Splints (plaster)

Method of Application: With the extremity held in the proper position, a dressing of Kerlix* gauze is first applied instead of the traditional cotton batting. This material will stretch to allow for swelling.

Wet plaster splints are then laid upon the dressing as lateral splints and moulded to the contour of the extremity. These splints are usually eight thicknesses each.

The elastic bandage is then applied, being careful that it is no more than two thicknesses when completed. To apply too many turns of elastic bandage will prevent stretching in the event of swelling. Care should also be taken that the lateral plaster splints do not overlap in a circular fashion as this can also cause constriction in the event of swelling.

In the event that it is necessary to dress a wound this can usually be accomplished by first removing the elastic bandage, but leaving the plaster splints in place, cutting an opening with scissors through the Kerlix gauze or cutting a section of the plaster splints if necessary. By so doing, it is unnecessary to remove the splints or to disturb the position of the fracture.

Forearm and Wrist: The application of the plaster splints in this region differs slightly from the procedure just described. Kerlix gauze is not used in this location. The splints are instead lined with one thickness of cotton batting. The plaster is then applied as anterior and posterior splints rather than as lateral splints which are fixed with elastic bandage in the same manner. It is rarely necessary to loosen such a dressing even in acute fractures, if it has been correctly applied.

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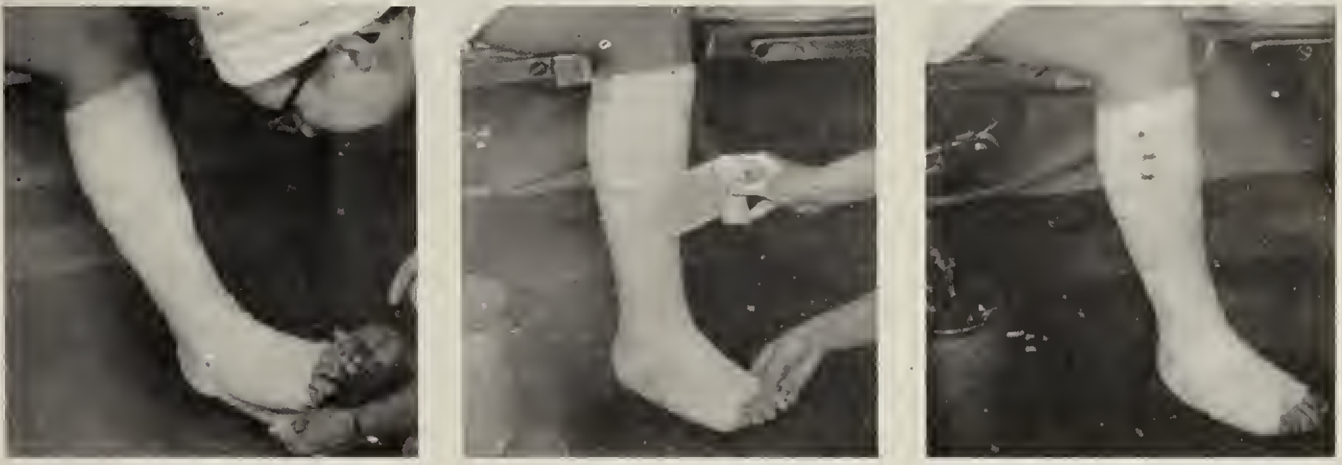
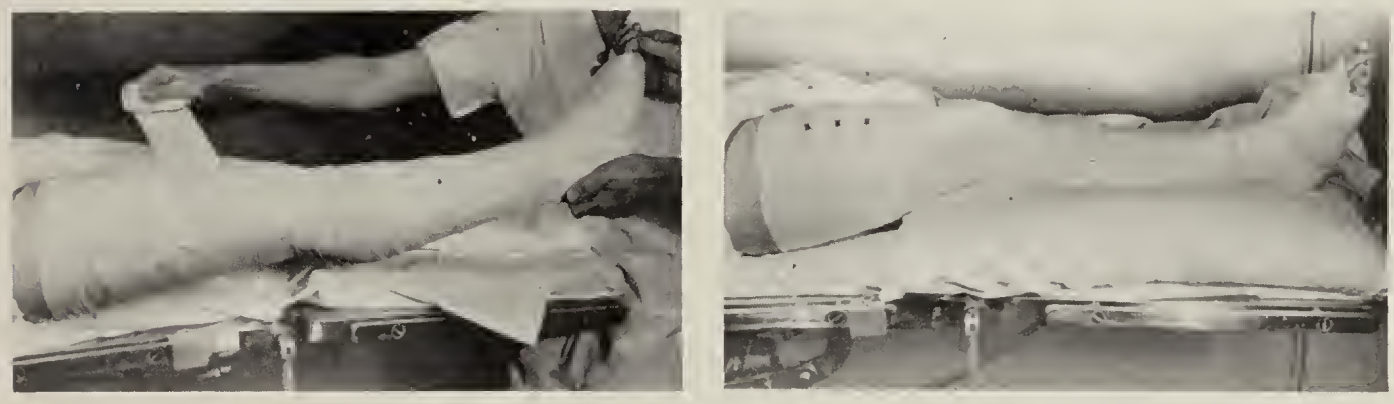
*Bauer and Black (Kerlix Rolls).

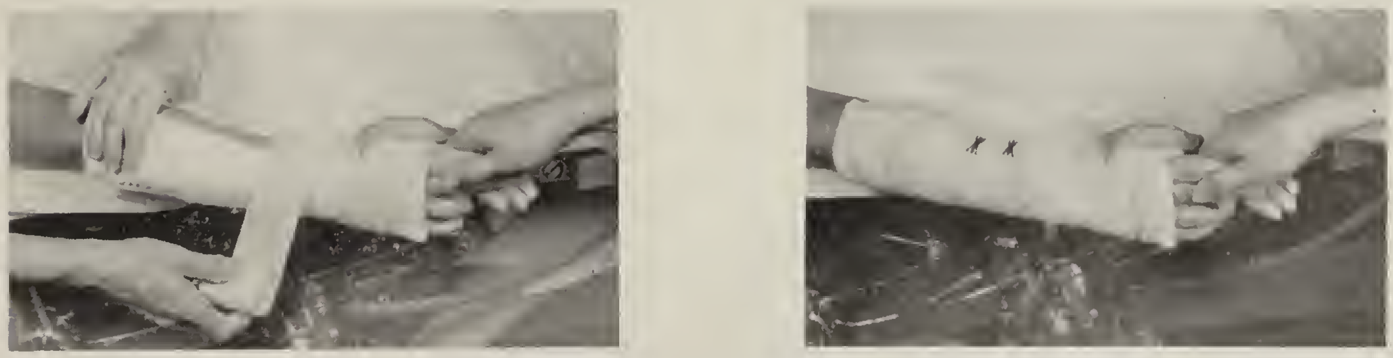
The K E S Dressing



Short leg dressing. The knee is flexed. Weight of foot is used for traction. Kerlix gauze has been applied. Lateral plaster splints curved forward beneath ball of foot to immobilize foot and ankle. Elastic bandage completes dressing.



Continuing application to groin provides adequate long leg dressing. Has advantage over cast because thigh portion can be tightened by reapplying elastic bandage.



To immobilize, wrist splints lined by one thickness of cotton batting are applied with elastic bandage. Kerlix is rarely used in this location.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

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Editorials

The Classification of Surgical Deaths in a Teaching Hospital

Guest Editorial

James D. Hardy, M.D., F.A.C.S.

The regular review and classification of all deaths occurring on a surgical service serves a teaching function which can be duplicated in no other way. The objectivity with which surgical deaths are reviewed affords a reliable gauge of the general health of the surgical service in question. No other single administrative procedure so strengthens the service and so elevates the overall standard of surgical care in the hospital. If this session of constructive self-criticism on the part of the surgical staff is a searching and a candid one, it has a profound influence throughout the department of surgery. Most important, it benefits the patient immediately, for the possibility that the management of each and every case may be critically reviewed by the surgeon's colleagues is bound to stimulate continuous reappraisal of the patient who appears certain to die; thus an occasional patient may be saved who otherwise might not have been saved. The surgeons themselves benefit from a thoughtful review of fatal cases. Methods of treatment which are unsatisfactory are more quickly identified through the shared experiences of the assembled surgical staff. Yet, perhaps the most far-reaching effect of the honest discussion of surgical mortality, as represented by individual cases, accrues from the influence which such a discussion has upon the interns and residents in training. These surgeons of the future are, during a most impressionable stage of their careers, indoctrinated with the creed that no patient can be allowed to die by default: *The surgical conscience is born.*

There follows a classification of surgical deaths which is used in many leading clinics and which has proved practicable:

I: *Operative Deaths* (patients who died within 30 days after operation)
  - ET Error in Technic
  - EJ Error in Judgment
  - EM Error in Management
  - ED Error in Diagnosis
  - UC Unavoidable Complication
  - EAM Error in Anesthetic Management
  - PD Patient's Disease

II. *Non-operative Deaths* (patients not operated upon or who lived more than 30 days after operation).

The individual categories are largely self-explanatory. An Error in Technic would be assigned if the common bile duct had been injured, if the suture line had leaked following the resection of a coarctation of the aorta, or if the colon had been opened in the performance of an hysterectomy, if these mishaps had clearly contributed to the death of the patient in question. An Error in Judgment would be assigned when, for example, a pneumonectomy had been performed when the patient's respiratory reserve would not tolerate the resection of so large an amount of functioning lung tissue. An Error in Management would be voted when there had been a failure to institute approved therapy which might clearly have prevented the death of the patient. For example, gastric suction might have been omitted in the presence of acute gastric dilatation, severe fluid and electrolyte derangement may have gone untreated, or indicated bronchoscopic aspiration may have been omitted in the presence of lung complications which contributed significantly to the death of the patient. An Error in Diagnosis may have led directly to death following contraindicated surgery, as in the patient whose jaundice was due to infectious hepatitis, or the Error in Diagnosis may have resulted in a failure effectively to treat a complication, as in the patient with massive atelectasis due to the plugging of a main stem bronchus. (The condition might have been diagnosed as coronary occlusion or pulmonary embolus). In the latter instance the surgical staff may decide that an Error in Diagnosis or an Error in Management, or both, contributed to the death of the patient. The category Unavoidable Complication is a flexible one, for theoretically most complications should be avoidable and thus they can be listed under either Error in Technic or Error in Management. However, the death of the patient who has a fatal pulmonary embolus, coronary occlusion, or cerebral hemorrhage is properly classified under Unavoidable Complication, in our present state of knowledge. The death of the patient whose demise was clearly due to difficulties with anesthesia is classified as an Error in Anesthetic Management and the anesthetist should attend the staff meeting to present his side of the question. Finally, a patient may die of his disease within thirty days following an operation at which carcinomatosis was found and the abdomen merely closed (Patient's Disease).

The regular review and classification of all surgical deaths occurring in the hospital serves a teaching function which can be duplicated in no other way.

MEDICINE'S REPORT

"American Medicine's Report to the Nation" is the title of the inaugural address by Dr. Howard J. McCormick, president of the American Medical Association. It should be read by doctor and layman alike. The following are excerpts from this document:

What parent did not thrill at the news that trials involving 55,000 children in polio-plagued communities showed gamma globulin could at least temporarily prevent the onset of the dreaded paralytic type of polio?

Surgical techniques that once were undreamed of, the past year stand out as indicators of exceptional progress in medical science.

There is one disease for which we can not develop a vaccine, and that is preventable accidents. Last year 96,000 died as a result of accidents of all types, one out of 11 suffered disabling injury of the 9,700,000 injured. The cost of these accidents amounted to $8,300,000,000 in medical expense, in surance, property damage and loss of wages.

One hundred and six years ago scattered medical societies joined hands to form the American Medical Association. Today this association has 140,000 doctors as members. They spend $10,000,000 per year working in the fields of rural health, etc.

More than 90,000,000 Americans now carry hospital, medical, and surgical insurance. Eighty per cent of the American families have no medical debt at all, seventeen per cent have debts from $1.00 to $200.00; only three per cent have medical obligations in excess of $200.00.

Since 1929 the supply of doctors has been increasing faster than the growth of our national population, in the past ten years the number of graduates from medical schools increased 19 per cent, while 25 per cent are expected in the next ten years.

Thirty-seven thousand doctors gave $3,000,000 last year to support medical education.

ADVANCING IN RESEARCH

In the August issue of *The Mississippi Doctor* we expect to have a paper entitled "The Effects of the Hydrogenated Ergot Alkaloids on Elevated Blood Pressure Levels". This paper is presented by Dr. Thaddeus D. Labecki of Jackson, and three associates in the experiments, Drs. Carland P. Gamble of Hattiesburg, Ira B. Bright of Greenwood, and H. N. Hamilton of Scott. We are delighted to see this research work in progress in our state. It is encouraging to see these men out in the smaller places taking part in it. Research in the small town and rural community can do much for the advancement of scientific medicine. The doctor who sees the same patient over and over for many years knows this patient in all of his relationship to life is in a convincing position to make observation and to render fine service in the field of research. This interest in research will add much to the quality of medical service in the small town and rural community. It is heartening to see Mississippi advancing in the field of research, with general practitioners participating. It marks a new day for us and a good day. Our four-year medical school can be of great asset in future undertakings like this.

§

RUSH PIN PRESENTED

You will note with interest in this issue the first installment of the "Atlas of the Rush Pin Technics". The series is presented in a studied graphic manner, setting forth technics developed by Leslie V. Rush of Meridian in the use of the Rush pin, the design and manufacture of which he has spent years perfecting. The forthcoming book by Dr. Rush will reflect great credit on the author and on the profession in our state. We take great pride in the success of his efforts.

Mississippi is on the way up in the field of medicine. We have already traveled far, but we are just good started in creative effort. Dr. Leslie Rush is a student and he has the tenacity of purpose to carry through. He will not be satisfied with less than the perfect ideal of performance. Time and money have not been spared in developing this fracture pin, and a great service is rendered in preparing this atlas, which makes every detail of the pin's use available. We acknowledge our appreciation for the privilege of sharing in this presentation.

§

POLIO

Polio is threatening ahead of schedule this season. There seems to be an increase of about twenty-five per cent over this time last year. Because of the enormity of tragedy in this disease there is hysteria on the part of the family, the neighbors and even the doctors oftentimes. The polio problem is a tremendous one. The National Polio Foundation, headed by the able Basil O'Conner, is thinking in practical and sensible terms in relation to patient care. The cost of handling the polio case has been staggering. Early diagnosis is still very important, but to carry every sick child to a polio center is not practicable. Volunteer helpers are now being advocated to cut expenses by relieving nurses and physiotherapists of many time-consuming duties. Also some of the time in the hospital may be cut down when home care can be advised earlier.

Medical economy is before us now on every hand. Every person must catch the spirit of service. The polio organization is doing practical thinking and practical planning. Gamma globulin is being tested this summer, but we must not expect too much too soon. Millions will be required for vaccine tests this fall. The fight has been long and hard and as yet accompanied by few triumphs, but medical science with the help of every citizen can conquer this disease.

§

T. V. A. ASSEMBLY

The Tennessee Valley Medical Assembly has scheduled a fine program for Monday and Tuesday, September 28 and 29, 1953. The meeting is to be held at the Read House, Chattanooga, Tennessee. The assembly is sponsored by the Chattanooga-Hamilton County Medical Society.

Dr. Phil Thorek heads the list of speakers with the subject "Acute Abdomen". Dr. Chas. W. Mayo of Rochester, Minn., and Dr. George Crile, Jr., of Cleveland are among the outstanding essayists who appear on this program.

This program should attract a fine attendance. Medical assemblies are on the increase in the mid-South. Doctors attend more medical meetings now. They feel the urge to "keep up". The Academy of General Practice is further stimulating the attendance of the general practitioner. Medical education is moving out to the busy practitioner. Our salute to the Tennessee Valley Medical Assembly.

§

TRAUMA SEMINAR

The Tennessee University Medical School at Memphis is putting on a medical seminar July 15-17 that should be attended by many doctors in the mid-South. The entire program is to be on traumatic wounds. There is wisdom behind the selection of this subject for such a program. Trauma is becoming more and more important to every doctor every day, and especially to the general practitioner. Seventy per cent of motor vehicle deaths occur out in the rural communities, highways, homes and fields being the chief sites for traumatic wounds. This course of lectures will be very helpful we are sure. We congratulate the medical school at Memphis on the program it is offering.

§

A medical journal should have first of all a mission, motivated by the best ideals of the profession it serves. It can and should be an enlightening and strengthening force to the medical profession and in turn the people. Mercenary purposes should be far from it.

JOINS U. T. FACULTY

Dr. Daniel A. Brody, part-time instructor in medicine at the University of Tennessee College of Medicine, has joined the division of medicine on a full-time basis.

Dr. Conley H. Sanford, chief of the Division, said the appointment will enable Dr. Brody to devote more time to teaching and research into cardiovascular ailments.

§

Plans for the program for the Mid-South Medical Assembly are moving right along. We shall soon be able to list some of the men who will appear on the program.

§

The North Mississippi Medical Society rendered a fine program at Oxford on July 2. Dr. C. M. Murry of Oxford, secretary of this society, is always on his toes for a fine program.

§

Esophageal Speech Clinic

An institute on teaching and improving esophageal speech will be held in Cleveland, Ohio, August 10-16, at the Cleveland Hearing and Speech Center. This institute, the second one on voice pathology, is being sponsored by the American Cancer Society, National Cancer Institutes of Health, the Office of Vocational Rehabilitation, the Cleveland Otolaryngological Society, the Cleveland Academy of Medicine and the Western Reserve University School of Medicine.

Nationally known surgeons, speech pathologists and lay teachers of esophageal speech will conduct lectures, demonstrations and supervise practice in teaching esophageal speech, fluoroscopic views will be used to facilitate studies of the physiology of esophageal speech.

Non-speaking laryngectomized persons are invited to attend without charge. They may be sent by surgeons, cancer societies, societies for crippled persons and rehabilitation services.

Surgeons, speech pathologists and lay persons are invited to attend to the sessions. Limited registration is necessary. Application must be mailed by July 15th to Warren H. Gardner,Ph.D., Program Chairman, 11206 Euclid Ave., Cleveland 6, Ohio.

GP SPECIALTY

Graduate education of family doctors, making general practice in effect a medical specialty, is gaining increased acceptance at the University of Colorado School of Medicine.

This program was based upon the premise that the survival of American medicine is dependent upon the preservation of the traditional family doctor.

Two types of postgraduate general practice training exist. The first, a two-year residency, is designed for the young physician who will practice in a large community or as part of a group and will not be faced with the problem of doing major surgery. His two-year residency includes nine months in a general out-patient clinic, six-months in internal medicine at Denver General Hospital, three months in pediatrics and three months in obstetrics and anesthesia. Each resident serves four months of the two-year period in a small community hospital.

The second plan is designed for the general physician who will practice in a rural community or practice alone in a large community. He takes a third year of surgical training or may spend the third year in medical, pediatric, obstetric and psychiatric services.

§

The American Urological Association offers an annual award of $1000.00 (first prize of$500.00, second prize $300.00 and third prize $200.00) for essays on the result of some clinical or laboratory research in urology. Competition shall be limited to urologists who have been in such specific practice for not more than ten years, and to men in training to become urologists.

PEDIATRICS

(Continued from page 57)

In such infants, however, manifestations of the hemolytic process may become apparent later. Two of three such infants showed marked pallor, after some weeks, and a drop in red cell count and hemoglobin levels and had to be transfused. It is possible also that other residual effects of latent disease may become apparent in later life, such as mental deficiency.

Thus a complete lack of correlation is sometimes noted between maternal titer, degree of anemia at birth, and the severity of the disease in the infant. The term "latent hemolytic disease of the newborn infant" is suggested to designate the inactive stage of the hemolytic process in the immediate neonatal period. Careful study of the bilirubin content of blood, the degree of sensitization of the child's cells, and the red cell regeneration response are indicated in all such infants.

News and Comment

ROUNDUP OF A.M.A. ANNUAL MEETING

The House of Delegates of the American Medical Association in session at the Waldorf-Astoria Hotel during the 102nd Annual Meeting of the A.M.A. in New York City, took important policy actions on veterans' medical care, medical ethics, osteopathy, intern training and a wide variety of subjects ranging from medical education to public relations.

The House also named Dr. Walter B. Martin of Norfolk, Virginia, as president-elect of the American Medical Association for the coming year. Dr. Martin will become president at the June, 1954, meeting in San Francisco, succeeding Dr. Edward J. McCormick of Toledo, Ohio, who took office at a special inaugural session of the House of Delegates in the Hotel Commodore during the New York meeting.

The New York meeting was the largest ever held in the history of the American Medical Association, with the final figures on total attendance expected to reach or surpass 40,000, including nearly 18,000 physicians.

Dr. Bauer, referring to charges of unethical practices among some doctors, declared that all members of the medical profession "should not be tarred with the same stick."

Dr. McCormick outlined a nine-point program for further improvement in the nation's medical care and expressed the hope that "their further development will solve many of medicine's problems and eliminate much of the criticism to which we are subjected.

Mrs. Oveta Culp Hobby, Secretary of Health, Education and Welfare, told the delegates that the present administration in Washington is looking with confidence to the nation's physicians for leadership in meeting the challenge of modern medical care problems.

The 1953 Distinguished Service Award was voted to Dr. Alfred Blalock of Baltimore for his outstanding work in vascular surgery and his part in the development of the so-called "blue baby" operation. Dr. Blalock, chief surgeon at Johns Hopkins Hospital and professor of surgery at Johns Hopkins University School of Medicine, received the award during ceremonies preceding the presidential inauguration Thursday night, June 2,

In addition to the selection of Dr. Martin as president-elect, the House also elected Dr. Carl H. Gellenthien of Valmora, New Mexico, to the office of vice-president.

Re-elected to office were:

Dr. George F. Lull, Chicago, secretary and general manager; Dr. J. J. Moore, Chicago, treasurer; Dr. James R. Reuling, Bayside, New York, speaker of the House of Delegates; Dr. E. Vincent Askey, Los Angeles, vice speaker of the House; Dr. Edwin S. Hamilton, Kankakee, Illinois, and Dr. Gunnar Gundersen, LaCrosse, Wisconsin, as members of the Board of Trustees.

The House elected Dr. Julian P. Price of Florence, South Carolina, to fill Dr. Martin's unexpired term on the Board of Trustees.

Twenty-six Mississippi State Medical Association members registered together with five service fellows of the armed forces and Veterans Administration claiming Mississippi. Official registration records listed the following physicians by date of registry.

June 1: Stanley A. Hill, Corinth; Robert E. Schwartz, Hattiesburg; and W. S. Witte, Leland.

June 2: B. J. Price, Meridian; S. Lamar Bailey, Kosciusko; J. P. Culpepper, Hattiesburg; DeWitt Dawson, Jackson; O. G. Eubanks, Crystal Springs; and Burton Friedman, Wesson.

S. S. Kety, Picayune; Virginia E. Lane, Columbus; John F. Lucas, Greenwood; and Rush Netterville, Jackson.

June 3: L. W. Brock, McComb; Charles L. Cox, Ruleville; Robert W. Crowell, Jackson; J. F. Eckford, Starkville; A. B. Harvey, Tylertown; J. T. Thompson, Moss Point; Robert B. Ireland, Clinton; and Howard A. Nelson, Greenwood.

June 4: Raymond F. Grenfell, Jackson; E. M. Meek, Greenwood; D. P. Street, Vicksburg; K. D. Gregory, Gulfport; and R. T. McLaurin, Laurel.

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POSTGRADUATE TRAUMA PROGRAM

Twenty-two members of the staff of the University of Tennessee College of Medicine will speak at a postgraduate program on trauma (injury) to be held in Memphis July 15, 16, and 17.

The course will be presented at John Gaston Hospital under the direction of Dr. Harwell Wilson, professor and chief of the Division of Surgery.

Speakers will be Dr. W. Milton Adams, Dr. J. Malcolm Aste, Dr. Duane Carr, Dr. D. S. Carroll, Dr. W. D. Dunavant, Dr. J. L. Farringer, Dr. J. D. Hardy.

Dr. L. K. Haynes, Dr. G. B. Higley, Dr. L. H. Mayfield, Dr. R. M. Miles, Dr. T. D. Moore, Dr. Frances Murphey, Dr. C. B. Olim, Dr. R. H.

Patterson, Jr., Dr. S. G. Robbins, Dr. R. E. Semmes, Dr. Hugh Smith, Jr., Marcus Stewart, Dr. M. J. Tendler, Dr. Harwell Wilson, and Dr. C. F. Yates.

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INTERNATIONAL COLLEGE OF SURGEONS

The eighteenth annual congress of the International College of Surgeons will open at the Waldorf-Astoria in New York on Sunday evening, September 13, with a session open to the public on the "International Surgeons' Hall of Fame" with Dr. Richard H. Shryock, director of the Institute of the History of Medicine of Johns Hopkins University, Baltimore, speaking on "Fame in Surgery." The scientific program will open on Monday morning, September 14, with a session on "Advances in the Treatment of Cancer", with Doctors Charles S. Cameron of the American Cancer Society, Cornelius P. Rhoads of the Sloan-Kettering Institute for Cancer Research, George N. Papanicolaou of Cornell University Medical College, T. A. Watson of Cancer Services for Saskatchewan, Komei Nakayoma of Chiba (Japan) University Medical School, and George J. Papayannopoulos, Athens, Greece, among the speakers.

Themes for the other general assemblies will include "Teamwork in Rehabilitation"; "Advances in the Treatment of Cardio-Pulmonary Diseases"; "Advances in Thyroid Surgery"; Surgical Treatment of Intervertebral Disc Lesions"; "Advances in Surgery of the Stomach and Intestines"; "Advances in Surgical Treatment of Diseases of the Esophagus"; and "Advances in Vascular Surgery."

Dr. William R. Lovelace of Albuquerque, New Mexico, is president of the United States Section of the International College of Surgeons and Dr. Douglas U. McGregor of Hamilton, Ontario, is president of the Canadian Section.

§

A.C.C.P.

The nineteenth annual meeting of the American College of Chest Physicians, held in New York City, May 28-31, 1953, surpassed all previous college records for attendance at both the scientific sessions and social functions. Approximately 1,500 registered, including 1,200 members and guest physicians, and 300 non-physician guests.

Dr. Alvis E. Green, Houston, Texas, was elected president and Dr. William A. Hudson, Detroit, Michigan, president-elect.

Doctor Robert E. Schwartz, Hattiesburg, is Governor of the College for Mississippi.

The next Annual Meeting will be held in San Francisco, California, June 17-20, 1954.

AMERICAN COLLEGE OF SURGEONS

More than 11,000 surgeons, other physicians and guests are expected to attend the thirty-ninth annual Clinical Congress of the American College of Surgeons, the nation's largest scientific meeting primarily concerned with surgery, to be held in Chicago, October 5 through 9, 1953.

Surgical techniques and new developments in surgery will be covered in this notable five-day meeting. The program will include formal scientific papers, panel discussions, symposia, postgraduate courses, surgical forums, medical motion pictures, ciné clinics, color television and exhibits. Headquarters will be The Conrad Hilton Hotel.

Dr. Harold L. Foss, president of the American College of Surgeons for 1953, will preside at the opening session at which Dr. Fred W. Rankin, Lexington, Kentucky, will be installed as president for the year 1954.

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PAN-AM WOMEN'S ALLIANCE

The fourth congress of the Pan American Medical Women's Alliance will be held at the Beekman Towers Hotel, First Avenue and 49th Street, New York, from September 24 through October 1, 1953. The morning hours will be given over to a scientific program of general interest. There will be round-table luncheon discussions with leaders speaking Spanish and English. Through the sponsorship of leading New York medical women those interested in a special field will have opportunities to attend clinics of their choice. The Medical Women's Association of New York is serving as hostess and planning a most delightful program, including tours of the New York Hospital-Cornell Medical Center and Columbia-Presbyterian Medical Center, a boat trip around Manhattan Island, tour and luncheon at the United Nations, visits to Radio City and the Empire State Building, and a drive to Hyde Park. Hotel reservations should be made direct with the hotel.

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DENTISTS TO MEET

Between three and four hundred dentists, including top dental and medical researchers, will be in attendance at the tenth annual meeting of the American Institute of Dental Medicine, at the Desert Inn and El Mirador, Palm Springs, California, October 25 through October 29, 1953.

Applications and full information on the Seminar program may be secured by writing Miss Marion G. Lewis, Executive Secretary, 2240 Channing Way, Berkeley 4, California.

Fifty Year Club Biographica

HARVEY FRANKLIN GARRISON, SR.

DR. GARRISON, SR.

Harvey Franklin Garrison, Sr., son of John E. and Narcissis Scott Garrison, was born July 3, 1879 in Mayesville, Georgia.

He received his M.D. degree from the University of Tennessee in 1901, and following this did postgraduate work at New York Polyclinic, New York Postgraduate Medical School, and Columbia University.

Doctor Garrison first practiced medicine at Seminary and for ten years served as county health officer of Covington County. Later, at the request of the Surgeon General of the Army, he assumed the responsibility of physician to a student-army training corps at Mississippi College, Clinton. In 1922, he entered the practice of pediatrics in Jackson. For eight years, he served as a member of the State Board of Health. Likewise, he served as President of the State Medical Association, 1936-1937, (Chairman and member of the Council for ten years); President of the State Pediatric Society and was President of the Southern Medical Association, 1943. He has served as: State Chairman and member of the legislative committee of the American Academy of Pediatrics; licentiate and Diplomate of the American Board of Pediatrics; and Chairman (1940) of the Section on Pediatrics of the Southern Medical Association. He served as delegate to the American Medical Association for many years, and has been the national representative of the American Academy of Pediatrics to the American Medical Association for 16 years and on the liaison committee of the Academy to the AMA for the same length of time. For the Study of Child Health Services, he served as a member of the National Committee of the American Academy of Pediatrics, and was a member of the advisory committee of the United States Children's Bureau for a number of years.

Doctor Garrison is a deacon in the First Baptist Church (former chairman of the board) a 32nd degree Mason; a Shriner and member of the Kiwanis and Knife and Fork Clubs.

In April, 1952, the Fifty Year Club of the State Medical Association honored this physician with lifetime membership. Throughout the years, Doctor Garrison has contributed outstanding leadership in the practice of medicine and in his specialty as a pediatrician. He is recognized nationally as well as locally in his specialty.

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NEWMAN C. WALDREP

DR. WALDREP

Newman C. Waldrep, son of William Jasper Waldrep and Desdemona "Weaver" Waldrep, was born December 21, 1876 in Itawamba County, Mississippi — about 2 miles west of Rara Avis, Mississippi (P. O. known as "Rare Bird").

He attended county schools and registered at an early age in The Oakland Normal Institute. At the age of 16 he started teaching and was a student and teacher (during vacation between school terms) for four years. In 1897 Dr. Waldrep matriculated in Louisville Medical College, Louisville, Ky., graduating in the class 1901. Granted a license in Alabama to practice medicine this same year, he practiced at Red Bay, Alabama, until he passed the Mississippi State Board in May, 1902, since which time he has practiced in Mississippi, now more than fifty years.

Doctor Waldrep received his D.B. and B.S. degrees from Oakland Normal Institute, 1895 and 1897, a hospital certificate from the City hospital, Louisville, Kentucky, and a medical diploma, Louisville Medical College.

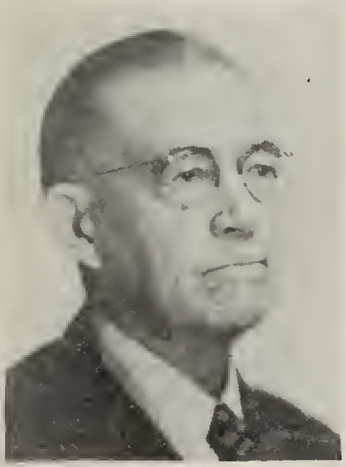
He was contract physician and surgeon for Tishomingo Land and Lumber Company, contract surgeon with the Army in CCC Camps when they were building the Tishomingo State Park, local surgeon, Illinois Central System, past patron, Tishomingo Chapter Order of the Eastern Star, past worshipful master, Lodge No. 552, F and AM, Tishomingo.

Doctor Waldrep's memberships include the Northeast Mississippi, the Mississippi State Medical, the Southern Medical and the American Medical associations, the American Association of Physicians and Surgeons, the Alabama Diabetic Association, the American Railway Surgeons Association, and W. O. W. He is a 32nd Degree Mason; member of the O. E. S.; Farm Bureau; Tishomingo Chamber of Commerce.

Doctor Waldrep was awarded a certificate and pin for more than 50 years' service in September, 1952, at a meeting of his district society in Tupelo.

§

GEORGE IRBY REDDITT



DR. REDDITT

George Irby Redditt was born in Carroll County on September 2, 1863.

In April, 1889, he graduated from Tulane University School of Medicine and began practicing on May 1, 1889.

Doctor Redditt has shown outstanding qualities of leadership—he is the oldest living ruling elder in the Presbyterian Church at Carrollton, likewise the oldest living Mason and the oldest living member of the Woodmen of the World in Carroll County. He served as a member of the State Legislature (1916-1920) and also as President of the Peoples Bank and Trust Company of North Carrollton.

On September 2, 1948, the Fifty-Year Club of the State Medical Association honored Doctor Redditt with lifetime membership. This was Doctor Redditt's eighty-fifth birthday.

Throughout the years, he has ministered to those in need and is held in high esteem by all who know him because of his sense of responsibility.

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HENRY REGINALD FAIRFAX

DR. FAIRFAX

Henry Reginald Fairfax was born in Virginia, August 2, 1875. He graduated from the Medical College of Virginia, April, 1898. He served as an intern at the Retreat for the Sick, Richmond, Virginia, and also as intern and acting assistant surgeon at the United States Marine Hospital, Boston, Massachusetts. Doctor Fairfax did postgraduate work in the United States and abroad a year and one-half.

For the last twenty-eight years, Doctor Fairfax has practiced medicine in Brookhaven, Mississippi, limiting his practice to eye, ear, nose, and throat. Prior to this time, he practiced medicine in Virginia and West Virginia.

Doctor Fairfax served as city physician, Bristol, Virginia, President of the Tri-County Medical Society, member of the staff of the Kings Daughters Hospital, Brookhaven.

The Fifty Year Club of the State Medical Association honored Doctor Fairfax with lifetime membership in the Association in August, 1948.

For his countless contributions to mankind, Doctor Fairfax is held in high esteem by his many friends and associates.

§

GEORGE HARDEN WOOD

DR. WOOD

On August 2, 1866, George Harden Wood, son of Andrew Jackson and Martha Dorsey Mitchell, was born near Opelika, Alabama.

He attended the public schools in Sardis and Batesville, and taught in a rural school for two years. He received his M.D. degree from the School of Medicine, University of Louisville in 1891. Later, he attended courses at New York Polyclinic, and Chicago Polyclinic.

In October, 1891, Doctor Wood started practicing in the Eldorado community near Batesville.

He operated the first clinic in Batesville; served as county health officer for Panola County for twenty years at different intervals, and served as the first local registrar of vital statistics (serving from 1912 until 1940) with the exception of a few years. He served as local surgeon for the Illinois Central Railroad, and was honored in 1952 with a life membership pass for his forty years of service and received a gold pin for his first twenty-five years of service. He served as vice-president of the Mississippi State Medical Association, examining physician for the United States Engineer Corps during the construction of Enid Dam, and as a member of the local Draft Board for the duration of World War I. He also served as examining physician for local Draft Board in World War II.

Doctor Wood received a Certificate of Merit and Selective Service medal authorized by Congress and the President, February 1, 1946 for his service as examining physician.

On October 4, 1947 the University of Louisville granted him a certificate of appreciation in recognition of his more than fifty years of service since graduation.

The State Medical Association on September 5, 1948 honored Doctor Wood with lifetime membership in the Fifty Year Club of the Association.

November 16, 1948 was known as "Doctor Wood's Day" in Batesville and surrounding territory. He was presented with a television set and special program was held in the Methodist Church honoring his more than fifty years of service to humanity.

§

WILLIAM DOUGLASS SMITH

DR. SMITH

William Douglass Smith, son of James S. and Sarah Douglass Smith, was born in Tate County on April 30, 1873.

He received his early education in the schools of Tate County and Newborn, Tennessee. He began the study of medicine at Memphis Hospital Medical College and later attended Vanderbilt University, receiving his M.D. degree from Vanderbilt in March, 1894. Doctor Smith began his practice in Tate County, then moved to Holmes County where he practiced for eight years. In 1907, he moved to Senatobia, and has been in active practice there since that time.

Doctor Smith has served as city health officer for Senatobia and also as county health officer. He was Chairman of the Tate County Chapter of the American Red Cross and also founder. He also served as examiner for the Veterans Bureau of Tate, Panola, and DeSoto Counties and also as a member of the Medical Advisory Board of the counties. He served as Tate County Chairman of the Board of Medical Examiners for the Selective Service Board during World War II; President of the Senatobia Commercial Club; local surgeon for the Illinois Central Railroad; trustee and steward of the Senatobia Methodist Church; vice-president and council member of the Mississippi State Medical Association and school physician for Northwest Junior College since its founding.

Doctor Smith is a member of the Senatobia Methodist Church, Masons, Woodmen of the World, and an honorary life member of the Senatobia Rotary Club.

On September 5, 1948, the State Medical Association honored Doctor Smith with lifetime membership in the Fifty Year Club.

In all activities in the community, Doctor Smith has served as a leader and has served his fellowman faithfully and well.

§

WOODIE NATHANIEL REED

DR. REED

Woodie Nathaniel Reed, son of M. L. and LaDusky Farrar Reed, was born in Itawamba County, February 2, 1877.

In 1901 he graduated from Memphis Hospital Medical College (now the University of Tennessee). He did postgraduate work at Tulane in 1907 and Chicago Polyclinic in 1908.

From 1907 until 1914, Doctor Reed served as Health Officer of Itawamba County and moved to Amory in 1914. He has served as local surgeon for the Frisco Railroad, 1914-1918, and has been division surgeon since 1918. He is past president of the East Mississippi Eleven Counties Medical Society, and was Superintendent of Gilmore Sanitarium during World War II, and serves as chief of staff at the present time.

He is past-president of the Amory Kiwanis Club and was presented the twenty-five year service pin by the Club.

In September 1951, Doctor Reed received the Golden T certificate from the University of Tennessee.

On November 24, 1952, the Fifty Year Club of the State Medical Association honored Doctor Reed with lifetime membership.

Doctor Reed has served faithfully and well and has brought honor to himself and to the profession.

CHARLEY CONSONTINE PYLE

(deceased)

DR. PYLE

Charley Consontine Pyle, son of D. W. and Amelia Jane Pyle, was born in Toccopola, Mississippi, April 15, 1876.

He attended high school at Toccopola, then entered the University of Tennessee Medical School at Memphis, graduating in 1900. Immediately following graduation, he began the practice of medicine at Belden. He located in Saltillo in 1902.

On September 12, 1950, the State Medical Association honored Doctor Pyle with lifetime membership. Also, in 1950, he received the "Golden T" certificate from the University of Tennessee in recognition of his long and faithful service to mankind.

Doctor Pyle passed away February 13, 1952 in Saltillo and was buried in the Saltillo Cemetery.

Doctor Pyle's understanding, and willingness to attend the sick at all times will always be remembered by his many friends.

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CHARLES HERBERT BUTLER

(deceased)

DR. BUTLER

Charles Herbert Butler, son of Doctor Franklin Eugene and Mary McDowell Butler, was born on July 26, 1876.

Prior to entering Tulane University in 1894, Doctor Butler taught school. He began the practice of medicine in 1897 with his father and practiced with him until his death in 1908.

Doctor Butler was active in community affairs until the time of his death January 19, 1951. He also served as local registrar for the county.

In 1951 the Fifty Year Club of the State Medical Association honored Doctor Butler with lifetime membership.

For approximately 50 years, Doctor Butler had practiced medicine. He lived in the same residence where his father, Doctor Franklin Butler lived, who practiced 40 years in the Amite community. Father and son gave 90 years to the practice of medicine.

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JAMES ANDREW CLARK

DR. CLARK

James Andrew Clark, son of William Andrew and Mary Nichols Clark, was born in Conehatta, February 16, 1876.

He attended high school at Newton, taught school for three years and then decided to study medicine.

He graduated from Memphis Hospital Medical College (University of Tennessee) in 1903. Immediately following graduation, he located in Ruleville and has practiced there since that time. After graduation, he did postgraduate work at the Polyclinic in New York, later studied in Chicago.

Doctor Clark served as medical examiner on the Draft Board in 1917 and 1918 and as chairman in World War II.

He is a charter member of the Ruleville Rotary Club and served twice as its president.

For thirty years, Doctor Clark was a member of the Board of Trustees of the Ruleville Public Schools and also the Ruleville Methodist Church. Likewise he has served as a member of the Board of Directors of the Bank of Ruleville; Chairman of the County Library Board and on April 12, 1947, he was named "Leading Citizen" of the town of Ruleville. The mayor issued a proclamation calling February 16, 1951 "Doctor Clark's Day" in honor of his 75th birthday.

In 1953, the Fifty Year Club of the State Medical Association honored Doctor Clark with lifetime membership. For more than fifty years he has had a part in the life, hearts, and the progress of Ruleville. He has always stood for those things which were good for all people and is greatly loved by all who know him.

HENRY LEANDER LEWIS

DR. LEWIS

Henry Leander Lewis, son of H. W. and Theresa Morris Lewis, was born near Kentwood, Louisiana, on August 21, 1867.

He attended Gillsburg College in Mississippi and Louisiana State and Tulane universities.

In 1892, he received his medical degree from the University of Louisville. Following this, he did postgraduate work at Tulane. Doctor Lewis first located in Mississippi at Street (near Liberty) where he has practiced medicine for sixty years.

He served on local Selective Service boards in World Wars I and II and received awards of commendation from Presidents Roosevelt and Truman. At present, he is a colonel on the governor's staff and serves as a member of the county Democratic Executive Committee. He has served as an elder in the Presbyterian church for twenty-five years and at present teaches a Bible class.

On May 12, 1953, the Fifty Year Club of the State Medical Association honored Doctor Lewis with lifetime membership in the State Medical Association.

Throughout the years, Doctor Lewis has served his fellowman faithfully and well.

§

WILLIAM VAN BUREN SAUL
(deceased)

DR. SAUL

William Van Buren Saul, son of William and Nancy Millsaps Saul, was born at Palo Alto in Clay County, Mississippi, on November 8, 1857.

He obtained his early education in the schools of Clay and Chickasaw Counties. In September 1876, he entered Cooper's Institute and studied there for two years.

In November, 1878, he went to the University of Louisville and was graduated in the spring of 1880. At the time he received his diploma, he received a certificate of honor for his excellent work in the study of obstetrics.

After his graduation, Doctor Saul returned to his home at Montpelier and began the practice of medicine.

In 1948, Doctor Saul was honored with lifetime membership in the Fifty Year Club on September 27 of that year.

He was a devout and faithful member of the Montpelier Christian Church for more than fifty years and served as an elder on the church board for the greater part of that time. He joined the Masonic Lodge in 1883 and later took the commandery and chapter degrees. He remained a Mason until his death, receiving his fifty year certificate of continued membership on June 26, 1941.

Doctor Saul passed away on February 4, 1949, at the age of ninety-one. He had lived a good and useful life serving his community, his neighbors, his patients, and his church faithfully and well. To his forebears his exemplary life and character was an honor. To his posterity, he left the greatest of all heritages—that of a good name.

§

MAJOR WASHINGTON WALDRUP
(deceased)

DR. WALDRUP

Major Washington Waldrup, son of Greene and Ann Waldrup, was born in Lake Como, Mississippi, on September 30, 1862.

He was graduated from Louisville Medical College, Louisville, Kentucky, February 24, 1891.

Following graduation, Doctor Waldrup took special training at Tulane University in New Orleans, Louisiana, in the treatment of children's diseases. He was one of the founders of the Wallace Drug Company, Laurel, in 1899; and served as president for fifty years.

In 1948, the Fifty Year Club of the State Medical Association honored this physician with lifetime membership.

On December 25, 1950, Doctor Waldrup passed away in Laurel and was buried in Lake Park Cemetery, Laurel, Mississippi.

All who knew and loved Doctor Waldrup will long remember him for his many kindnesses.

JAMES WALTER LUCAS

DR. LUCAS

James Walter Lucas was born at French Camp on March 4, 1872. He graduated from French Camp Academy, June, 1890, attended Mississippi College, graduating with B.A. degree in June, 1903. For three years, he served as principal of the High School at Kilmichael. He attended the University of Nashville and the University of the South, graduating in 1898. His first practice was in Guatemala, Central America, for a few months, then he located at Moorhead where he has practiced since that time. He served as District Surgeon of the Y & MV. Railroad and local surgeon of the Southern Railroad Company beginning in 1904. After graduation from medical school, he did postgraduate study at the New York Polyclinic.

He was founder and one of the two principal builders of the Baptist Church and parsonage at Moorhead. He has been a deacon in the Church since its founding. In the field of education, he contributed to the upbuilding of the Sunflower Agricultural High School and afterwards the Junior College.

He served as councillor of the first Medical District of the Mississippi Medical Association from about 1920 to May, 1949.

Doctor Lucas is charter member and president of the Delta Medical Society, and charter member of the Clarksdale and Six counties Medical Society.

On August 15, 1948, the Fifty Year Club of the State Medical Association bestowed lifetime membership in the Fifty Year Club upon Doctor Lucas.

Throughout the years, Doctor Lucas has served faithfully and well and has contributed continually to the upbuilding of the practice of medicine in the state.

§

Attend Annual Fifty-Year Luncheon

The above picture was taken of the Fifty-Year luncheon held at the Buena Vista Hotel during the meeting of the Mississippi State Medical Association. Those present included: Dr. E. C. Parker, Gulfport; Dr. Isaac Edwards, Canton; Dr. H. C. Owen, Holly Bluff; Dr. J. G. Backstrom, Tutwiler; Dr. T. M. Dye, Clarksdale; Dr. H. L. McKinnon, Hattiesburg; Dr. H. F. Garrison, Sr., Jackson; Dr. J. Rice Williams, Houston; Dr. W. H. Scudder, Mayersville; Dr. H. L. Lewis, Liberty; and Dr. W. H. Frizell, Brookhaven, president. Dr. Felix J. Underwood, Jackson, secretary, and Dr. W. H. Anderson, Booneville, sponsor, were also present. Guests in attendance were: Dr. George F. Lull, Chicago, Illinois, secretary and general manager, American Medical Association, Mr. C. P. Loranz, Birmingham, Alabama, Secretary-Manager, Southern Medical Association; Dr. Lamar Arrington, Meridian, president, State Medical Association; Dr. M. Q. Ewing, Amory, president-elect, State Medical Association; Dr. Jere Crook, Jackson, Tennessee, past-president, Southern Medical Association; Dr. R. C. Eley, Moss Point; Dr. J. R. Hill, Corinth; Dr. B. Lampton Crawford, Tylertown; Dr. G. W. F. Rembert, Jackson; and Miss Cleta Brinson, Jackson, secretary to Doctor Underwood.

DEATHS

DR. J. W. DUGGER

Dr. J. W. Dugger of 3503 Downing St., Jackson, who has been with the State Public Health Department since 1928, died at 10 p.m. May 22, while visiting his daughter, Mrs. Ben M. Stevens, in Gulfport.

Dr. Dugger was born in Okolona and was graduated from the University of Tennessee Medical School.

He was director of the division of industrial hygiene for the State Department of Health.

The 68-year-old prominent doctor was former president of the Mississippi Medical Association. He was a Baptist.

He leaves his wife, Mrs. Alma Dugger; a daughter, Mrs. Stevens of Gulfport, and a son, A. F. Dugger of Picayune. He also leaves three grandchildren, Ben M. Stevens Jr., Gulfport; Miss Susanne Dugger of Picayune, recently named "Miss University of Mississippi" and who is a contestant for "Miss Mississippi," and A. F. Dugger Jr., a Naval officer stationed at Charleston, S. C.

DR. FORD WILLIAMS

Funeral services were held for Dr. Ford Smith Williams, 43, prominent Jackson dermatologist who died suddenly at his residence on Old Canton Road May 23.

A native Jacksonian, Dr. Williams was the son of Dr. J. H. and Mary Smith Williams. He was graduated from Mississippi College, Clinton, and received his medical degree from LSU School of Medicine. He interned at Charity Hospital, New Orleans, and did postgraduate work in dermatology at Johns Hopkins and the University of Pennsylvania. He was also associated with the Louisiana Public Health Service before returning to Jackson in 1947 to begin private practice.

He was a veteran of World War II.

Survivors include his wife, the former Anne Ella Fugate; four children, Ford, Lou Anne, Cathy and Charles; two brothers, J. H. Williams, Hazlehurst, and Dr. Douglas Williams, Lake Charles, La.; three sisters, Mrs. Claude Smith, Memphis, Tenn.; Mrs. C. E. Eames and Mrs. Martha Pointer, both of Baltimore, Md.

DR. J. R. HERVEY

Services were held in Moorhead from the C. M. Davis residence for Dr. J. R. Hervey, retired Moorhead physician whose body was found in the Sunflower River May 24.

The Rev. Charles Ray of the Moorhead Baptist Church officiated, assisted by the Rev. John Sutphin, Methodist minister of Moorhead.

Dr. Hervey was born in Water Valley, the son of the late, Mr. and Mrs. John Kimbell Hervey. He received his medical degree from Emory University in Atlanta. With his brother, L. D. Hervey, he founded the Hervey Lumber Company at Moorhead, with branch offices throughout the Delta.

He was the former president of the Citizen's State Bank in Moorhead, former mayor of the town, prominent in business and civic work. He was a Baptist, and a Rotarian.

Dr. Hervey leaves two brothers, Sam Hervey and L. D. Hervey, both of Moorhead; four sisters, Mrs. C. M. Davis, Mrs. E. W. Dimond of Moorhead; Mrs. Z. D. Jennings, Helena, Ark., and Mrs. Jewell Tatum of Tupelo.

DR. JOHN W. BARKSDALE

Dr. John W. Barksdale, among Mississippi's most prominent physicians died May 9 in Jackson.

He was a cancer sufferer for many weeks and lately had been so close to death that absent members of the family had been summoned to the bedside.

Dr. Barksdale, a retired Jackson surgeon, resided at 1440 North State Street, died at his residence.

He is survived by his wife, formerly Miss Emily Meade Hawkins; three sons, Col. Battle Barksdale, U. S. Army; J. W. Barksdale, Jr., and Henry Barksdale, both of Jackson; four daughters, Mrs. W. D. Lawson, Gastonia, N. C., Mrs. Emily Humphrey, of Jackson, Mrs. T. K. Turner, Washington, D. C., Mrs. George Vinson Haler, of Boston.

He was born at Valden on Nov. 20, 1876, son of the late Dr. Charles Henry and Emily Woodson Barksdale. He was educated in private schools and received his medical degree from the University of Alabama in 1899, beginning his practice in Birmingham, Ala., where he remained until 1905. He was instructor of surgery at the Memphis, Tenn., Hospital Medical College for one year and came to Jackson in 1923 as a surgeon and chief of staff of the Jackson Infirmary.

Dr. Barksdale served as a lieutenant-colonel, senior surgeon at the hospital center in Rimaucourt, France, and the commanding officer of Base Hospital 58 during the first World War. He was a member of the Southern Surgical Society, past governor and fellow American College of Surgeons, member of the American Medical Association, past president of the Mississippi State Medical Society, past president of the Tri-State Medical Society and member of the founders group of the American Board of Surgery. He was a member of the Newcomen Society of England and also was a member of St. Andrew's Episcopal Church.

DR. W. C. SMITH

Funeral services were held May 3 for Dr. Warren C. Smith, prominent Yazoo City physician, who died after a long illness.

The Rev. R. E. Alsworth officiated at the service, assisted by Dr. Robert S. Woodson. Burial was in Glenwood cemetery with Strickland-King funeral home in charge of arrangements.

Dr. Smith is survived by his wife; three daughters, Mrs. N. V. Doty, Jackson; Mrs. Ross Turner and Mrs. R. E. Ledbetter, Yazoo City; three brothers, Dr. P. M. Smith, Tchula; H. E. Smith, Greenwood; Lamar Smith, Benton; three sisters, Mrs. Howard Moorhead, Greenwood; Mrs. Walter Rainer, Belzoni; and Mrs. Edward Zeigler, Pickens.

DR. JACK EASOM

Dr. Jack Johnson Easom of Carthage, died at his home May 28. He had been practicing medicine in Carthage for the past five years. His age was 33.

He was graduated from the University of Mississippi, and finished his medical work at Tulane University. He served as intern at Shreveport, La., coming to Carthage from that city. He was a member of the Carthage Rotary club and a veteran of World War II.

Woman's Auxiliary

President	Mrs. S. Lamar Bailey	Kosciusko
President-Elect	Mrs. M. M. Snelling	Gulfport
First Vice-President	Mrs. Richard Clark	Hattiesburg
Second Vice-President	Mrs. James A. Kiely	Vicksburg
Third Vice-President	Mrs. W. H. Anderson	Booneville
Fourth Vice-President	Mrs. A. E. Brown	Columbus
Recording Secretary	Mrs. R. F. Grenfell	Jackson
Treasurer	Mrs. J. D. Simmons	Cleveland
Historian	Mrs. Harvey F. Garrison, Sr.	Jackson
Parliamentarian	Mrs. J. C. Suares	Jackson
Corresponding Secretary	Mrs. M. S. Riddell, Jr.	Winona

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OUR NEW PRESIDENT

As capable as she is striking in looks and manner, the new state president brings to the office fine promise for a most active year.

Mrs. S. Lamar Bailey

Mrs. S. Lamar Bailey is from Kosciusko, where her husband has devoted a convincing part of his time to citizenship along with his practice of medicine. Her share in community activities has been helpfully diverse and effective. Book and garden clubs, P.-T. A. and church activities have all claimed her participation, while Auxiliary work has remained her constant love. Other cultural interests include music, painting, and interior decorating, through which she finds delightful expression in her home.

Two years as president of the North Central Medical Auxiliary, four years as councilor from the Fourth District, and state chairman of *Today's Health* prepared her for the post of leadership she now graces. An alert, untiring, and zealous worker, she elicits the willing cooperation of doctors' wives over the state for a year of great accomplishment.

A native of South Carolina, Mrs. Bailey is a graduate of the University of South Carolina, two years having been previously spent at Furman University. She was a member of Kappa Delta Phi national sorority.

President's Message

As we begin this thirty-first year of our existence, let us resolve to support more diligently the aims and ideals of our Auxiliary.

Let us ask ourselves if we appreciate what we are an auxiliary to. Let our answer be that we are that auxiliary that shares the honor of our Medical Association. Let us give to our physicians that highest praise which they so richly deserve, and let us uphold forever the honor of the profession whose prime object is "to bring cheer into the sickroom and often, though not so often as desired, bring healing".

Let us create a spirit of love, friendliness, good will and willing cooperation by working together for the understanding of all people. The responsibility of molding the right attitude in our community rests on you and me.

To paraphrase from a quotation from Dr. Miriam Van Waters, "Women are valuable just in proportion as they are able and willing to work in harmony with others".

Mrs. S. Lamar Bailey, president

AWARDED SCHOLARSHIP

Miss Janice Cranston

Janice Cranston, senior in Gulfport High School, and daughter of Mrs. R. E. Cranston, 1812 20th Avenue, has been declared winner of the $100 nursing scholarship granted by the Woman's Medical Auxiliary of Gulfport. She is a member of the Future Nurses' Club at Gulfport High School. The scholarship was awarded at the graduation exercises May 28.

Miss Cranston was guest of honor of the medical auxiliary meeting, over which Mrs. M. Dunn, incoming president, presided. Mrs. Dunn is also Nurse Recruitment chairman for the state organization.

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SMA AUXILIARY AT HENRY GRADY

The Henry Grady Hotel, 210 Peachtree Street Northwest, Atlanta, will be used for Auxiliary activities in Atlanta. The Henry Grady is one of the large and nice downtown hotels accessible to the Municipal Auditorium where all of the scientific activities of the Association will be held. The Auxiliary president, Mrs. Stover, announces that the activities of the Auxiliary will be at the Henry Grady Hotel which officially indicates that hotel as headquarters for the Auxiliary.

All hotel reservations clear through the Housing Bureau. In making reservations, those who wish to be at the Henry Grady should specify that hotel.

CONVENTION SPEAKER

Dr. Frank G. Slaughter, surgeon, medical text book writer, novelist, has accepted the invitation extended him to speak to the Woman's Auxiliary of the Southern Medical Association on October 27, Atlanta, Gergia, at the annual meeting.

The title of his address: "The Physician's Heritage".

Dr. Slaughter lives in Jacksonville, Florida, and is perhaps best known to the lay public for his novels which have been numerous and all extremely popular and well-written. You, too, will recall him when I tell you that he has written such well known and popular novels as: *In a Dark Garden, Spencer Brade, M.D., That None Should Die, A Touch of Glory, The Golden Isle, Sangaree, Divine Mistress, The Stubborn Heart, Fort Everglades, Road to Bythinia, East Side General* and others.

Another convention surprise: This year in Atlanta, the Auxiliary will have an exhibit at the exhibit hall of the convention of the Southern Medical Association and here's one thing we will need:

Doctor's Day programs for prizes will be exhibited, so please keep your publicity, your programs, your props, your posters and whatever else that will make Mississippi's entry for the prizes on Doctor's Day programs most interesting.

Diseases of the Female Urethra*

ROBERT F. SHARP, M.D.
New Orleans, La.

Diseases of the female urethra are responsible for a wide variety of complaints suffered by women. Some of these lesions require for their diagnosis and treatment a skilled urologist; others however, may be easily diagnosed and corrected by the general practitioner or gynecologist. It is the purpose of this paper briefly to discuss the "urethral syndrome", the diagnosis of the different lesions of the female urethra, and the treatment requirements.

ANATOMY

The normal female urethra is approximately 1½ inches long and has a calibre of 28 to 36 French. In its course from the bladder neck to the meatus, it passes through the triangular ligament. It is this latter structure which supports the urethra and bladder neck and makes for continence of urine under stress. The wall of the urethra is composed of three coats, the mucosa made up of stratified squamous epithelium in the distal half and transitional epithelium in the proximal portion, constitutes the inner layer. The submucosa, consisting of loose areolar tissue and a network of venules, makes up the middle layer. The outer coat consists of an inner longitudinal layer and an outer circular layer of non-striated muscle fibers. Situated in the sub-mucosa and muscularies are mucous glands, being more numerous in the distal part of the urethra. There is some controversy as to the significance of these glands, but the majority of the authors on this subject believe they become infected and play an important part in causing chronic urethritis. Skene's ducts, or the para-urethral glands, open just inside the meatus on each side.

Located as it is, the female urethra is subject to trauma from sexual intercourse, masturbation, childbirth and surgical procedures. Gonorrhea selects the urethra as one point of entrance to the body, and chancre and chancroid lesions are always possibilities. The micro-organisms of the vagina have access to the female urethra. Anomalies are much less common than in the male, but occasionally hypospadias and epispadias does occur. Fortunately malignancy of the female urethra is rare.

URETHRAL SYNDROME

Since the female urethra is subject to several different diseases, the symptomatology varies. Nevertheless, there is sufficient uniformity to justify the term "urethral syndrome." The most common complaint is referrable to the act of urination, and consists of frequency, urgency and dysuria. These symptoms usually indicate that the bladder has become acutely infected as a complication. Nocturia, pain in the bladder region, especially when full, is a common complaint; partial incontinence, a feeling of residual urine, difficult urination, or acute retention, hematuria, dyspareunia and enuresis, are other symptoms noted. Any of the above complaints make careful examination of the urethra a real obligation of the physician.

Powell[1] found referred pain in 60 per cent of a series of 603 cases of urethral disease of various types, stating that the pain "was usually a dull, indefinite suprapubic ache, or pain in one or both groins, thighs, hips, loins, lumbosacral or sacroiliac areas. Occasionally, it was severe and cramp-like and alternated with knife-like cutting pains that radiated and simulated ureteral colic". These referred pains naturally do not readily suggest urethral disease and the diagnosis is usually made only after many other diagnostic procedures have failed. As a matter of fact, these women are frequently surveyed urologically with a negative report. Unless special attention is directed to the urethra, which should include inspecting the urethra and bladder neck with a fore-oblique lens and the palpation of the urethra, the diagnosis will likely be missed.

LESIONS OF THE MEATUS

These are the conditions that can be diagnosed and treated without the urologist.

Meatal stricture is one of the most common causes of recurrent acute cystitis in the female. If allowed to continue, it predisposes to chronic urethritis and probably urethral diverticuli. After an acute attack of cystitis has subsided, the meatus and urethra should be calibrated. An acorn-tipped Bougie-a-boule is preferable but an ordinary sound may be used. If found below a size 30, the meatus should be enlarged so that the urethra will take a 32 French. This can be done in the office, using cocaine 2 per cent topically in the meatus. It is preferable to enlarge the meatus above the requirement so that some allowance is made for healing. The urethra should then be dilated at two-week intervals until the meatus is completely healed. Any urethral stricture that may be present is adequately cared for in this way.

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*Presented before the Section on Surgery of the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

Urethral caruncle usually presents no diagnostic problem. It may be confused with, or exist with, urethral prolapse. The caruncle usually is more or less pedunculated, being attached to the posterior subsurface of the meatus, but may include the entire circumference of the meatus, is a bright strawberry red and quite sensitive to touch. It occurs mostly in women past menopause. This lesion is considered a chronic inflammation and not neoplastic. There is a strong tendency to recur whether removed by fulguration or sharp dissection. I have never seen one turn malignant. It is important to remove all the abnormal tissue and meatotomy is usually advisable. Small asymptomatic caruncles require no treatment.

Urethral prolapse is a protrusion of the urethral mucosa through the meatus. This may occur at any age, but is more common in the two extremes of life. There is supposed to be a congenital predisposing factor in that the mucosa attachment is faulty. The exciting causes are straining from bladder inflammation, constipation of labor. The tumor mass in this case is dark red, usually surrounds the whole meatus and is not sensitive. Treatment consists of a Whitehead type removal and suturing the urethral mucosa to the meatus with fine interrupted plain catgut.

Urethral diverticulum is a pouch situated along the course of the urethra, connected to the latter by one or more openings. This may be multiple or single, symptomatic or asymptomatic. The presence of a mass on the anterior vaginal wall, varying in size and sensitivity is strongly suggestive of urethral diverticulum. Add to this, incontinence of urine immediately after voiding and history of repeated attacks of frequency and dysuria, and you have conclusive evidence. Pressure on the mass usually results in purulent urine draining from the meatus. Cystourethroscopic examination will nearly always reveal the opening or openings in the urethra. Urethrogram made by injecting some oily iodide preparation, as iodochloral or lipiodol will demonstrate the pouch which may be at any location around the urethra or underneath the bladder floor. Not all urethral diverticuli require treatment. In those that do require surgery, it is not necessary to remove the entire sac, so long as the urethral opening is properly closed.

It is now recognized that urethral diverticuli are not nearly so rare as once was believed. I have found seven cases in my private practice, six of which were successfully operated upon. In the other case, there were two shallow diverticuli that were asymptomatic and surgical intervention was not necessary. In addition to these seven cases, there was found one urethro-vaginal fistula, which apparently resulted from opening the sac of a urethral diverticulum while an anterior colporrophy was being performed. Stones sometimes form in these pouches and when the opening to the urethra becomes occluded, an abscess will frequently develop. My first case developed such an abscess, which was incised by a surgeon, leaving a urethrovaginal fistula.

Chronic urethritis or granular urethritis. Due to the writings of Folsom[2], O'Brien[2], Deter, et al[3], Spence[1], Powell[1], and many others, urologists have come to recognize the urethra as being responsible for many complaints in women, previously unexplained. The lesions that are credited with causing this urethral syndrome consist of a chronically inflammatory process especially involving the proximal third of the urethra. Pathological studies of the urethra by many of the authors on this subject, indicate that in the submucosa there are hyperplastic lymph follicles, glands and so-called Brunn's glands, showing evidence of infection and cystic degeneration.

DIAGNOSIS

The symptoms previously described under urethral syndrome, and the lack of anything in the upper urinary tract or bladder to explain the chronicity of the symptoms, makes chronic granular urethritis a likely possibility. Palpation and catheterization of the urethra, reveals it to be unduly sensitive and usually thickened and indurated to some degree. Pressure on the urethra against the pubis will frequently reproduce the lower abdominal pain complained of. On cystourethroscopic examination, the proximal urethra is usually reddened and granular in appearance. There may be longitudinal elevated ridges of mucous membrane and marked injection of the blood vessels. At the vesical neck are frequently found polypoid fronds and cystic masses.

The cystourethroscopic findings are not an accurate gauge to the severity of the symptoms. The polypoid excrescences and the cystic changes are found occasionally in women who have no other evidence of this disease. I consider the sensitive, thickened and indurated urethra a prerequisite for the diagnosis. Cystourethroscopic examination confirms the diagnosis and at the same time eliminates the possibility of other conditions. Contracture of the bladder neck is occasionally seen. The urine usually shows no evidence of infection except during an acute infection of the bladder.

It is well to remember that this disease may occur at any age. Spence[4] reported a series of 118 adults and 50 children with granular urethritis. He stated that the symptomatology in children was comparable to that in adults, with the additional feature of enuresis which occurred in 20 of the 50 cases reported. Dysuria, frequency, urgency and incontinence, were the symptoms commonly noted by me, in children diagnosed as having granular urethritis. The diagnosis is seldom confirmed by cystourethroscopic examination, since they usually clear up on one or two urethral dilatations and urethral instillations or bladder irrigations.

TREATMENT

These patients are frequently first seen with an acute cystitis. This repeated acute flare-up of symptoms is frequently responsible for a change of doctors. At this stage of the illness, chemotherapeutic drugs, antibiotics and a mild antiseptic bladder irrigation give prompt relief. Once the acute symptoms have subsided and the diagnosis of granular urethritis is established, active treatment is begun.

Urethral dilatation should be gradually increased at weekly intervals until a 28 to 34 French calibre is reached. Meatotomy is often necessary to accomplish this. Dilatation should be followed by instillation of silver nitrate ½ per cent to 2 per cent (8-10 ccs.) in the urethra and bladder; emptying the bladder first. This is best carried out with a 10 cc. luer syringe, placing the tip into the meatus and holding firm pressure against the meatus as the injection is made. The instillation may be alternated with a warm solution of silver nitrate 1:9000 or potassium permanganate 1:-6000 as a bladder irrigation, allowing the patient to void the irrigating fluid out after the bladder is completely filled. Urethral massage with and without the sound in the urethra, should be done also. As the condition improves, these treatments are spaced at increasing intervals. Hot sitz baths, douches and urinary sedatives have beneficial affects and give some relief of symptoms. In stubborn cases, transurethral fulguration of the granular mucous membrane, polypoid masses and cystic areas should be done. Spence[4] fulgurated 42 of his 118 cases. Burns[5] estimated 10 per cent of these cases require fulguration. Even when fulguration is done, it is still necessary to carry out the urethral dilatation and local applications as described above. Finally, all foci of infection should be eradicated with especial emphasis on cervical and vaginal infections.

SUMMARY

1. Urethral lesions in women are responsible for many longstanding and recurrent distressing symptoms.
2. Diagnosis of these conditions requires that the physician be aware of the existence of such lesions and be willing to examine the urethra carefully. Diagnosis and treatment of those lesions of the meatus may be done by others than urologists. More proximal lesions usually require the urologist for an accurate diagnosis.
3. Chronic granular urethritis should be suspected in women who intermittently suffer the "urethral syndrome" without any evident urethral lesion to explain their complaint, and a negative upper and mid-urinary tract. The presence of a sensitive, indurated and thickened urethra, plus cystourethroscopic evidence of chronic inflammation in the proximal part of the urethra, confirms the diagnosis of chronic granular urethritis. The course of this disease is chronic with a tendency to recurrent acute cystitis. Treatment must be energetic and kept up at increasing intervals over a long period. Granular urethritis may occur in children and fortunately responds more readily to treatment than in adults.

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Penetrating Wounds of the Eye

P. ROBB McDONALD
Philadelphia, Pa.

A PENETRATING wound of the globe is usually a serious injury and frequently leads to loss of useful vision. In a minority of cases, however, the penetrating wound may be missed on the first examination and it is only the subsequent reaction that leads one to suspect the true nature of the condition.

As ophthalmologists I think we sometimes forget some of our basic training and neglect to take a good history. Even if the diagnosis is obvious we should know how, when and where? If an intra-ocular foreign body is suspected we should attempt to find out whether it is brass, copper, lead, glass or iron. We should also inquire as to previous injuries, what the vision was prior to the accident, etc. One is much more likely to get an honest answer at the time of the original examination than later when the patient has time to consider the possible compensable benefits. In doubtful cases the anterior segment of conjunctiva should be carefully scrutinized with the slit lamp and the lens and fundus examined with the pupil fully dilated.

I have seen a needle-sharp steel filling cause a retinal hemorrhage yet its track through the cornea be barely visible and the hole in the root of the iris only be seen with a gonioscope. I have also seen a small conjunctival laceration and surrounding hemorrhage dismissed as a negligible injury but subsequent exposure of the sclera revealed a 5mm. laceration with prolapse of uveal tissue. There should be no excuse for missing a penetrating wound and if one is seen or if even suspected an x-ray of the globe would be taken to rule out an intra-ocular foreign body. In the case of young children it may be impossible to determine the extent of the damage without examination under anesthesia. If this is necessary it should be done in the operating room where facilities for repair are available.

In any penetrating wound of the globe there are certain general measures that should be carried out irrespective of whether the wound is in the anterior or posterior segment. The first is the prevention of infection. Leopold[1] in a recent article presented six cases of intra-ocular infection that occurred despite the prophylactic administration of the antibiotic in adequate doses. Chloramphenicol is the antibiotic of choice because of the fact that it penetrates the ocular tissues so well. He recommends 3 gm. as an initial dose then 1 gm. every 6 hours. This drug however is not very popular at the present because of reported blood dyscrasias. Penicillin and streptomycin may be used but should be employed in sufficiently high concentrations to be effective. Another measure that should not be neglected is the administration of tetanus antitoxin or a booster dose. Sensitivity to the antitoxin should be determined.

In discussing penetrating wounds of the globe one could separate them into several categories, i.e., with or without iris prolapse, lens involvement or an intra-ocular foreign body. Such a classification would be repetitious. I would like to discuss first perforating wounds of the anterior and posterior segment without intra-ocular foreign bodies and lastly to discuss the management of intra-ocular foreign bodies.

The treatment of uncomplicated corneal lacerations is usually not difficult. In some instances the wound is closed and the anterior chamber reformed. When this is the case the tendency is usually to do nothing but patch the eye. It is my personal feeling that any corneal laceration more than 3 mm. in length should be sutured with direct corneal sutures. Though the wound appears secure I think there is a greater tendency for the cornea to buckle and produce irregular astigmatism in an unsutured wound. With Grieshaber needles and good anesthesia and akinesia direct corneal suturing can be accomplished with relatively little trauma. I personally prefer general anesthesia as a supplement to local anesthesia in any patient who is apprehensive or if it is known that the procedure will be prolonged. I do not favor the use of a conjunctival flap unless there is a jagged wound which cannot be closed neatly with direct sutures. A conjunctival

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*Presented before the section on Eye, Ear, Nose and Throat at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss, May 10 - 13, 1953.

flap only obscures the wound and adds little support when direct sutures are used.

If a scleral wound is suspected the patient should be prepared in the regular manner and after adequate anesthesia and akinesia the conjunctiva should be incised and the wound exposed. I am sure that you have all been surprised at sometime or other to find a much larger scleral wound than you suspected. Here again direct sutures should be used in any wound over 3 mm. or in any wound in which there is prolapse of choroid or ciliary body. If there is prolapse that can be replaced a paracentesis of the anterior chamber will facilitate the repair of the eye if it is not already soft. A thin spatula will help in depressing the prolapsed tissue while tying the sutures.

Many perforating wounds of the anterior segment are associated with iris prolapse. A few years ago all iris prolapses were excised. With the advent of better suturing material and reduction in the chances of infection ophthalmologists have been attempting to replace prolapsed tissue whenever possible. If the prolapse is fairly extensive or if the sphincter is torn, attempted replacement will usually fail and the prolapsed iris should be excised. If the iris is to be replaced this should be accomplished with the minimum chance for an extensive anterior synechia. Any prolapse that has existed for more than 24 hours and is firmly incarcerated in the wound is difficult to free from the lips of the wound. If the base of the iris only is incarcerated one may excise a portion of the iris leaving the sphincter intact. If the sphincter is lacerated a complete iridectomy is the safer procedure. Once the iris is freed and the wound sutured air should be injected into the anterior chamber. If an anterior synechia is present this can frequently be freed by introducing a spatula inside the limbus through a small beveled wound on either side of the original laceration. If this is swept over the area of contact the air in the anterior chamber will usually cause the iris to fall back to its proper position.

Every attempt should be made to clear the anterior chamber of hemorrhage before closing the incision. Hemorrhage into either the anterior or posterior segment may be an annoying and even disastrous complication. Anterior chamber hemorrhage in penetrating wounds has not in my experience been as annoying as the hyphema that may follow contusions. Thygeson and Beard recently reported a series of cases of traumatic hyphemia. Out of 34 patients two had light perception and three were blind, two eyes being enucleated. I do not agree with their recommendations as to treatment of contused wounds though I do think that every patient with a penetrating wound should have the atropine in the affected eye and a binocular dressing. Any iris incarceration if extensive enough to warrant repair should be treated surgically. I have never seen a miotic even DFP pull an iris out of a wound.

Many penetrating wounds cause some damage to the lens. The lens damage may be minimal or extensive. If the damage is not extensive and the lens is not swollen I favor repairing the wound and leaving the lens alone. If there has been a penetrating wound of the cornea and the anterior capsule has been ruptured and the lens is swollen when the patient is first seen an attempt should be made to remove lens substance. This is especially true if the lens may be expected to swell enough to cause bulging of the wound. This may be done through the corneal wound if it is large enough; if not, a keratome incision may have to be resorted to. As in the case of most extra-capsular extractions as much of the anterior capsule as possible should be removed. It is very important that any capsule adherent to the wound be removed. Since many penetrating wounds of the lens are through and through, every precaution should be taken not to lose vitreous and if possible keep it out of the anterior chamber. It would be much better to allow cortex to remain in the anterior chamber until a vitreous-posterior capsule membrane is formed. In irrigating lens material out of the anterior chamber I have found the long-tipped Randolph cyclodialysis irrigator of great value. One can frequently get cortical material from underneath the iris. At the conclusion air should be placed in the anterior chamber to free the posterior surface of the wound from capsule, cortex or iris.

Should linear extraction be postponed until a later date I have found the procedure described by Cordes for congenital cataracts to be very satisfactory. That is, I make a preliminary knife-needle incision for the injection of air. The keratome incision is then beveled with a suture placed through both lips of the wound. The anterior lens capsule is removed with capsule forceps and as much of the cortex and nucleus removed as possible. One must never lose sight of the fact that in penetrating wounds of the lens the injury may have been through and through and the anterior hyaloid ruptured. In such cases it is easy to lose vitreous, so attempts to remove capsule or cortex with forceps is dangerous.

Penetrating wounds of the posterior segment are treated much the same as those of the anterior segment. Because these wounds are frequently more extensive than one suspects, the use of general anesthesia is preferable to local anesthesia. This is especially so if traction has to be made on any of the muscles. A retrobulbar block is dangerous in these cases because of the possibility of a retrobulbar hemorrhage. Conjunctival and Tenon's capsule should be dissected free, exposing the entire scleral wound. If there is any danger of choroid or vitreous prolapsing, a paracentesis of the anterior chamber should be performed. This serves to reduce the intra-ocular pressure and will facilitate suturing the wound. Direct scleral sutures with a Grieshaber needle should be used. Vitreous if present should be excised and the choroid replaced if possible. Many such cases have suffered irreparable damage and enucleation may have to be performed. These cases also are frequently complicated by vitreous hemorrhage and damage to the retina. It is surprising, however, what dramatic cures are sometimes obtained. Two years ago I saw an eighteen-months-old child who fell on a broken milk bottle top. There was a half-inch through and through laceration of the upper lid and a half-inch laceration of the sclera to the temporal side of the superior rectus muscle. Vitreous was flowing from the wound. The wound was sutured and intrascleral diathermy placed about the incision. The parents were advised that enucleation might be subsequently performed. Today the child has what appears to be a normal eye, the retina is intact and all that can be seen is a few diathermy scars. I am a firm believer in the use of intrascleral diathermy for any wounds behind the ora serrata.

The next general category to consider is penetrating wounds associated with an intra-ocular foreign body. A considerable literature has accumulated on this subject and there are still differences of opinion as to how some of these cases should be handled. With few exceptions all penetrating wounds of the globe should be suspected of being accompanied by an intraocular foreign body and an x-ray should be taken. Accurate localization is just as important as speedy removal. We are fortunate at the Wills Hospital to have an individual who is exceptionally expert with the Sweet localizer. X-ray examination however does not tell us whether or not the foreign body is magnetic. A careful history as to what metals were involved may be a clue as to the magnetic properties of the object.

Callahan reviewed the subject of removal of intra-ocular foreign bodies a few years ago and I am in essential agreement with his recommendations. Foreign bodies that have entered the eye anteriorly and are localized anterior to the ciliary body or in the lens can usually be removed most expeditiously from the anterior segment. I originally tried removing small foreign bodies in the posterior segment by pulling them around the lens with a giant magnet. They frequently became enmeshed in the ciliary body and their extraction was difficult. I now prefer to remove them from the pars plana and do not consider this a traumatic procedure. Occasionally small foreign bodies become enmeshed in the iris and cannot be dislodged. When this occurs I make keratome incision over the foreign body and either pull the iris out with the magnet or mechanically with forceps and remove the foreign body under direct observation. The iris is then allowed to fall back into the chamber which is then filled with air to prevent anterior synechia.

With few exceptions an attempt should be made to remove post segment foreign bodies from the pars plana. It is in this situation that a Berman locator is of great value especially in minute foreign bodies. Generally speaking, the sclera should be bared in the region of the pars plana nearest the site of the foreign body. If the foreign body is a millimeter or more in size and highly magnetic it will usually dimple the sclera. Verification with a Berman locator should be attempted. If the foreign body is localized at the site then a scratch incision should be made perpendicular to the limbus to avoid cutting across any major vessels. I frequently place a suture through both lips of the scleral wound and have my assistant pull them apart in order to facilitate cutting down on the choroid. Once the choroid is exposed I do a paracentesis of the anterior chamber. This reduces the intra-ocular pressure and reduces the chances for vitreous loss. The magnet is applied and the foreign body is teased through the choroid. If the foreign body is large the incision may have to be enlarged in a T or L shaped manner. Last year I had a foreign body the exact size and shape as the needle on our atraumatic 5-0 silk sutures. Rather than make an 8 mm. incision in the sclera

I pulled the foreign body into the wound, grasped it with forceps and tilted it so that one end was exposed and slipped out. Once the foreign body is removed the sclera should be sutured and surface diathermy placed about the incision.

Large sclera wounds should have sutures placed but not tied prior to attempting removal of the foreign body. It is surprising what an insult the eye will sometimes withstand. I have one patient who had an 8 mm. laceration parallel to the internal rectus muscle with a foreign body 8 x 2 mm. long in his only eye. This was removed through the wound of entrance and he obtained 6/6 vision when the vitreous hemorrhage finally cleared.

There are some small intra-ocular foreign bodies that become imbedded in the retina and can not be pulled forward. These should be accurately localized with a Berman locator before cutting down on the sclera. If the fundus is visible I first surround the foreign body with intra-scleral diathermy and then make my incision in the sclera in the center of my diathermy applications.

I have seen several patients with small magnetic foreign bodies in the vitreous that could not be moved to the periphery with any magnet though movement over an arc of a few millimeters was possible. Any attempt to introduce the tip of the magnet or other instruments into the vitreous to get the foreign body usually ends in disaster. Though the eye may eventually be lost it is better to have it go slowly than precipitously following surgery.

Now magnetic foreign bodies are always a most serious problem. I have had no luck with an endoscope. The incision has to be so large and one is so unfamiliar with the manipulation of the instrument that the eye is usually severely mutilated. If the fundus is visible I think it much better to attempt removal through a scleral incision under direct observation with the ophthalmoscope.

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The Effect of Hydrogenated Ergot Alkaloids on Elevated Blood Pressure Levels

THADDEUS D. LABECKI, M.D., Jackson, Miss.
IRA B. BRIGHT, M.D. Greenwood, Miss.
GERALD P. GABLE, M.D., Hattiesburg, Miss.
H. N. HAMILTON, M.D. Scott, Miss.

Few disease syndromes present a more challenging problem to the physician than hypertension. It is not superfluous, however, to re-emphasize the old cliche that hypertension is a sign only and that the disease itself and the patient harboring it should be the object of therapy. Attempting to treat the sign alone is both unsound and hazardous. Although at the present time the therapy of hypertensive disease is palliative at best, therapy often has to be undertaken in order to prevent, allay or delay complications and sequelae of the elevated arterial pressure common to several pathological conditions.

Correct or most probable diagnosis of the condition causing hypertension should be the first task when dealing with the new patient. Renal hypertension can be diagnosed with a considerable degree of accuracy through a thorough renal work-up including, in addition to careful history and routine procedures, an intravenous pyelogram. The approximately one per cent probability that hypertension in a given patient is due to pheochromocytoma warrants specialized tests by competent physicians acquainted with the "typical" response to histamine, dibenamine and/or regitine tests. Since this is a truly curable type of hypertension we dare repeat the advisability of eliminating that possibility in a patient diagnosed tentatively as suffering from essential hypertension. Diagnosis of coarctation of the aorta should be considered if the history is indicative or if the patient has femoral pulsations absent or equivocal and a suggestive x-ray of the chest; additional, more specialized tests like angiocardiography, which is performed in our state, are frequently dramatically conclusive. Certain endocrine disturbances may cause or contribute to hypertension, and their presence must be detected and, if necessary, eliminated when possible.

The presence or absence of symptomatology and the sequelae or accompanying pathology must be the determining factors whether it is advisable and relatively safe to lower arterial pressure and if so to what extent. The advice of an experienced physician well acquainted with the problem of cardiovascular disease in general and with the use of hypotensive agents in particular is truly the safest, wisest and, in the long run, most economical course of action for everybody concerned. While as yet we have no ideal anti-hypertensive agent, one can state that we do have well suited patients for some of the drugs in the fairly broad spectrum of hypotensive agents. The problem is to fit the proper drug to the proper subject, considering all the complex problems of hypertensive disease. The contribution of a cardiovascular practitioner-consultant may be of greatest value.

For some individuals lowering the pressure unduly may be inadvisable and, indeed, disastrous, as poor coronary filling may directly precipitate myocardial ischemia with all the obvious sequelae. Some of the hypotensive agents decrease renal or cerebral circulation or both; some, by objectionable side effects, minimize their practical value, although admittedly the individual variation is considerable from the standpoint of both response and side effects. Certain hypotensive drugs are contraindicated if other medication is concurrently administered and vice versa; others are tolerated better if certain régimes are adhered to or other medication added.

The purpose of this report is to convey our findings on the safety, practicality and efficacy of a combination of hydrogenated ergot derivatives: dihydroergocornine, dihydroergocristine and dihydroergokryptine (first investigated by our group and others as CCK 179 and subsequently released on the market as Hydergine*). The credit for obtaining these active component alkaloids of ergotoxine goes to Stoll and Hoffman.[1] The fact that dihydrogenation rendered ergot derivatives considerably less toxic, less emetic, but pharmacologically quite active and sympatholytic-like was evident from studies first in Europe[2,3,4,5,6] South Africa,[17] and in our country.[7,8,9] The encouraging preliminary report in hypertension with dihydroergocornine alone in this country[10] and the response of fifty individuals to a test dose of CCK 179 reported by Gibbs in England[11] prompted us to observe the effect of Hydergine in thirty hypertensive patients.

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* Hydergine (CCK 179) was supplied through the courtesy of SANDOZ PHARMACEUTICALS, New York City.

METHODS OF STUDY

Thirty patients selected from among the private patients of three physicians all received prior to this study a thorough diagnostic workup and were diagnosed as having essential hypertension. Their response to relative rest, moderate to profound sedation, and long range medication with either outright placebo or drugs which may be considered as such on the basis of their lack of efficacy has been well known to the physician in attendance. The length of prior observation by the attending physician was the only criterion in our choice of clinical material.

At the beginning of the experiment all the patients agreed to come to the physician's office at least five days a week to have their blood pressure level determined and the medication administered; they also agreed to return one hour later for observation of the effect of the drug. Saturday and Sunday or Sunday only were excepted from study. As it will become apparent not all of them were willing or able to continue to report for daily observation, and, in spite of the fact that some of them continued to receive subsequent medication three or even four times per week, only the period of daily observation is considered in this report. In all the patients multiple blood pressure readings were available, and from these the average pre-therapy levels were computed. The values should be regarded as objective enough since they reflect the usual variations caused by the fluctuating course of hypertension and influenced also by daily stresses and rest, excitement and sedation, drugs and placebos, etc. Similarly several readings subsequent to cessation of therapy were taken over a period of days and the average computed to be tabulated as post-therapy levels.

The routine of administration agreed upon and followed uniformly by all three observers was to administer .3 to .6 mgs of Hydergine daily following careful determination of blood pressure levels. The subject was instructed to go about his business, have a meal if mealtime happened to fall into the period following drug administration, and return one hour later to have his blood pressure determined. It was deemed advisable to admit the patient immediately and check the pressure in order to prevent waiting to serve as a rest period which by itself can lower the blood pressure reading. No other medication was administered; no radical or even proved dietary régime such as marked restriction of sodium intake was followed. At varying intervals the observer would ask about symptoms in a casual manner with no suggestive leading questions—uncertainty and even frank scepticism as to the efficacy of the drug prevailed in our conversation with patients. The symptoms considered were: headache, vertigo, restlessness, insomnia, irritability, visual disturbances, malaise. Eye grounds were studied in a number of cases. The progress of symptomatology was coded arbitrarily but with a real effort toward uniformity in the following manner: aggravation of symptoms as —; no or only equivocal improvement as 0; definite and lasting improvement of one or two symptoms, +; considerable improvement of two or more symptoms, ++; abolition of all symptoms previously attributed to hypertensive disease and lasting through the observation period and for a reasonable period afterwards when data were being tabulated, +++.

RESULTS

It appeared advisable to divide the thirty patients under observation into "favorable", "equivocal", and "refractory" groups according to the apparent response to medication. The improvement in symptomatology was not of primary importance in our classification of the patients. Eleven subjects constitute the favorable group (Table I). All but two were studied from seven weeks to five months; two cases were observed daily for two weeks. We felt justified in including them in the favorable group because one (EMcS) in addition to an impressive drop in blood pressure following every injection was almost entirely relieved of intermittent claudication; the other had a profound decrease in blood pressure following every injection and no side effects, and although she could not report daily after two weeks she continued to respond favorably to occasional administration of the drug. Out of eleven favorable cases eight were females. The mean values for this group and for the other two groups are given in Table II.

The equivocal group includes twelve subjects. They were classified as such either because of the too short daily observation period—although during that time highly significant drops in pressure were noted—or because the duration of blood pressure decrease, while profound, was of particularly short duration returning to previous levels a few hours after administration of Hydergine. In several cases the pressure drop, while repeatedly greater than on placebo, was not impressive enough to consider safely as favorable. There were eight females among the twelve equivocal cases.

The refractory group is composed of seven patients. Interestingly enough they were all white males with the youngest forty-four years of age, the oldest sixty-four; the remaining five range from fifty to fifty-nine years of age. Their mean age is higher than that of the favorable group by five years, but it is very similar to that of the equivocal group.

It is to be noted that out of six colored patients four were in the favorable group and two in the equivocal; decrease in both systolic and diastolic blood pressure was always very impressive but, particularly in the two equivocal cases, of definitely short duration.

From Table II it may be seen that the highest pre-therapy systolic levels were in the favorable group. The lowest levels both systolic and diastolic are to be found in the equivocal group. The highest average drop was in the favorable group, with the post-therapy levels in the favorable and equivocal groups almost identical. The average period of observation in both the favorable and refractory groups was about two months.

The refractory cases usually exhibited good response at first; gradually, however, and sometimes very rapidly they built up a resistance to the drug so that an increase even up to .9 mg and in two cases to 1.2 mgs in the dose did not have any appreciable effect. In some cases paradoxical response was encountered, the blood pressure being higher one or more hours following administration of the drug. Two cases experienced definite improvement in symptomatology and a feeling of well being and tranquility and, consequently, were appraised as double plus.

It was particularly gratifying that hypotension, true or relative, common to some other anti-hypertensive agents did not occur in any of the subjects under observation. The only side effect noticed in the majority of patients was stuffiness of nasal passages. Slowing of the pulse was encountered objectively. Two subjects in the equivocal group complained of nausea when they ate lunch shortly after administration of Hydergine. The majority of patients in the favorable and equivocal groups and two patients in the refractory group voluntarily emphasized a definite feeling of well being and tranquility far beyond the possible effect of placebo. It was interesting that the sense of well being was apparently not related to the degree of blood pressure drop although it frequently accompanied decrease from highly elevated levels to a "compromise" level. This level is still abnormal by acceptable criteria but it is probably safer to obtain especially in an individual with long standing hypertension.

DISCUSSION

The statistical methods routinely performed in other biological studies are hardly applicable to observations on blood pressure levels. It is more objective and more helpful to study a group of patients very well known to the attending physicians particularly in smaller communities and compare the results with those obtained with other regimes, treatments and even periods of spontaneous remission if any occur.

The pressure values at the end of the observation period are somewhat higher than the figure obtained by subtracting the average drop in pressure from the pre-therapy level. This discrepancy both in individual cases (Table I) and when mean values were computed (Table II) is due to two factors. First, the average drop in every case was computed from many readings often taken over a period of weeks or months; second, the post-therapy level was averaged from several readings subsequent to therapy. It reflects the short activity of the drug, the effect of which seldom lasts longer than twenty-four hours and apparently usually wears off after twelve to eighteen hours.

The definitely smaller average drop in systolic and diastolic pressure in the refractory group, even at the beginning of the observation period before they developed resistance to the drug, may be viewed along the higher mean age as compared with the favorable group. Does this reflect a greater degree of organic changes in the arterial or arteriolar wall which might correlate with the longer duration of elevated blood pressure, or should we question the role of hypertension as a contributory factor to peripheral arteriosclerosis? The greater mean age and the fact that all were males ought to be considered as a possible explanation of the refractiveness of those subjects. It should be noted however that all but two subjects—a sixty-three-year old white female and a fifty-four-year-old white male—in favorable group had diastolic pressure higher than 110. Senile or Mönckeberg's type of arteriosclerotic hypertension is characterized by elevated systolic but little if at all elevated diastolic levels. Our

TABLE I

Patient	Age	Sx.	Ra.	Avg. Pre-Therapy Blood Pressure		Days of Uninterrupted Observation	Avg. Drop in B. P.		B. P. at end of Observation Period		Subjective Improve'mt.
				Systolic	Diastolic		Sys.	Dia.	Systolic	Diastolic	
I FAVORABLE											
RLW	54	M	W	198	102	118	14.0	5.4	175	92	+++
GE	36	F	C	290	160	102	34.2	16.3	198	132	++
EW	37	F	C	242	160	48	32.9	20.2	160	110	++
MK	45	F	W	260	130	55	30.1	148.	200	118	+
LMH	72	M	W	240	130	54	36.2	19.6	170	120	O
BTC	55	F	W	230	120	153	24.5	13.2	190	110	+
CMcB	40	M	W	190	120	56	19.1	14.4	160	98	++
EMcS	62	F	W	190	90	16	23.9	12.7	130	60	++
DFL	68	F	W	190	110	69	29.2	15.6	142	90	+++
GS	43	F	C	190	120	48	30.0	16.4	160	100	++
LH	52	F	C	180	118	14	30.0	18.0	140	80	++
II EQUIVOCAL											
EE	43	F	C	210	120	82	34.7	11.0	190	120	+
DH	37	F	C	170	130	6	30.0	10.0	180	120	O
MP	66	F	W	160	100	30	16.4	8.4	150	80	+
RHW	62	M	W	170	100	18	11.8	4.3	145	96	++
BS	38	F	W	190	110	3	30.0	10.8	180	100	—
FHR	59	F	W	180	110	9	20.8	19.3	160	80	O
JGL	64	M	W	180	110	9	25.2	18.5	110	90	O
BCC	41	M	W	190	130	18	21.1	12.0	180	120	++
OFD	73	M	W	200	120	18	22.1	15.9	170	90	++
LRB	63	F	W	192	110	14	22.0	15.0	170	100	+
AWT	71	F	W	220	110	11	24.7	12.9	170	110	+
MRP	48	F	W	190	110	6	21.5	14.0	138	90	O
III REFRACTORY											
WES	54	M	W	200	132	88	18.6	11.9	200	120	++
LT	44	M	W	190	110	31	16.6	11.3	180	120	O
HC	50	M	W	160	110	20	17.7	6.4	150	90	++
LGN	59	M	W	213	119	138	22.4	12.9	190	110	—
LC	64	M	W	220	120	137	15.3	9.2	200	110	—
MTM	54	M	W	236	140	7	10.0	13.0	210	118	O
HE	56	M	W	180	110	10	12.0	6.7	180	110	O

TABLE II

Mean Values for Three Groups Under Consideration

	Age	Pre-Therapy Level		Days of Observation	Drop		Blood Pressure at End of Observation	
		Systolic	Diastolic		Systolic	Diastolic	Systolic	Diastolic
I FAVORABLE	49.5	218.2	120.9	56.6	28.5	15.1	165.9	100.9
II EQUIVOCAL	55.4	187.6	113.0	18.7	23.4	13.1	162.5	99.7
III REFRACTORY	54.4	119.8	120.1	61.6	16.1	10.2	187.1	111.1

choice of clinical material can therefore be regarded as satisfactory from the point of view of the diagnosis of essential (and not "arteriosclerotic") hypertension.

We have been impressed with the ability of dihydrogenated ergot alkaloids to influence favorably the symptomatology. In this observation we are not alone.[11],[12],[13],-[14],[15]. Slowing of the heart action is a salutary effect and is apparently due to the parasympathomimetic action of these substances. In experimental studies the bradycardia induced persists after sympathectomy but not after vagotomy.[16]

The mode and site of action and the segment of the vascular tree most profoundly influenced by dihydroergocornine have been studied by others[17] and are being studied by two of us (T.D.L. and I.B.B.) in a constant temperature room. Blunschli and Goetz[18] suggested on the basis of their data that the medulla and/or hypothalmus is the primary site of action for dihydroergocornine. The central effect of Hydergine may be responsible for the sense of well being and tranquility so frequently experienced by the subjects receiving this substance. One may also postulate that this phenomenon is also due to the ability of the dihydroergot compounds to block effectively the effects of epinephrine and to increase markedly the lethal dose of intravenously administered epinephrine.[19] If we would assume that hypertensive individuals respond to daily stresses by an undue release of epinephrine and/or allied substances, the implications become obvious.

A wide margin of safety was noted by us and stressed by others.[20]. This and the lack of annoying side effects and virtual lack of contraindications make Hydergine an apparently safe drug.

Our experience with oral and sub-lingual routes has been very discouraging. We could not observe any effect on blood pressure; neither was there any change in symptomatology. This would indicate that the effect of the drug in our investigation was not psychological. Others reported good results with oral Hydergine in peripheral vascular disorders.[8]

On the basis of our experimental data and clinical experience and that of others it may be stated that one may expect a favorable response to frequent parenteral administration of a mixture of hydrogenated alkaloids in one out of three patients subjected to this form of therapy. Furthermore it is fair to anticipate symptomatic improvement in probably a larger percentage of cases without impressive or even perceptible lowering of blood pressure. The lack of risk connected with decreased cerebral and renal circulation and increased load upon the heart, make it an apparently safer drug in those cases where the above considerations make one cautious in administering potent hypotensive agents. A rather moderate decrease in the arterial pressure makes it unlikely that the coronary filling will become impaired due to the action of the drug.

SUMMARY

1. Thirty carefully selected patients diagnosed as suffering from essential hypertension have been studied daily over a period of time ranging from a few weeks to several months. An equimixture of hydrogenated alkaloids (CCK 179) was administered parenterally five or six times a week.

2. The subsequent period when fewer doses per week were administered was discarded from this report.

3. About thirty per cent (11 patients) responded favorably to Hydergine from the objective standpoint. The symptomatology improved in more than half of the subjects observed beyond the possibility of a placebo effect.

4. The oral and sub-lingual forms were found to be ineffective in the experience of the authors.

5. The experimental and other investigative data are mentioned briefly and the mode of action and the indications are discussed.

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One out of every 9 people in the U. S. were
hospital patients sometime during 1951.

Intestinal Parasitism in a Plantation Population of the Yazoo-Mississippi Delta*

FRANCES E. JONES, A.B., DON E. EYLES, Sc.D., and CLINTON S. SMITH, A.B.

Memphis, Tenn.

A STUDY OF *Endamoeba histolytica* and other intestinal parasites in a plantation population of the Yazoo-Mississippi Delta was made by this laboratory in the late summer of 1951. The plantations studied are located in Tunica County, in the bottomlands of the Mississippi River, and their alluvial soil is typical of the delta region which is so favorable to the production of cotton.

The people studied were Negro cotton farmers living under the crop sharing system; and while the economy of the region is on a very firm basis, the environmental conditions of the people closely resembled those of a less prosperous rural group which we studied in west Tennessee (Eyles, Jones and Smith, 1953).

A total of 227 families composed of 935 individuals was examined in the course of this study. The people were very cooperative and only six members of the families studied are not included in this report because of their refusal to supply the specimens requested.

Three fecal specimens from each individual were collected at weekly intervals in half-pint cylindric cardboard cartons which were packed in portable ice boxes and taken to the laboratory in Memphis the day of collection. There they were refrigerated overnight and examined on the following day.

The laboratory examinations were made by technicians experienced in the identification of the intestinal protozoa and helminth eggs. Each specimen was examined by two methods which have been described in detail in a previous paper (Eyles, Jones and Smith, 1953). Briefly, a direct smear of the fecal material in iodine and an iodine stained sample prepared by a modification of Faust's zinc sulfate centrifugal flotation technic were examined microscopically. The specimens had been refrigerated at least 24 hours before examination; therefore, no effort was made to find or identify trophozoite forms of the intestinal protozoa.

All *E. histolytica* and any doubtful organisms were examined under oil immersion magnification. In addition, a sufficient number of *E. histolytica* cysts in each positive specimen were measured with a filar micrometer ocular to determine whether they belonged to the large or small race of this species. Cysts measuring 10 microns or more were considered the large and those less than 10 microns the small race.

RESULTS

Over-all prevalence rates: The prevalence rates by individual and by family for the intestinal parasites are given in table 1. *Endamoeba histolytica*, the ameba of most interest because of its medical importance, was found in 10.7 per cent of the individuals living on these plantations. *Endamoeba coli* occurred in 19.0 per cent of the population and *Endolimax nana* in 30.2 per cent while *Iodamoeba butschlii* was found in only 2.0 per cent. The flagellates, *Giardia lamblia* and *Chilomastix mesnili*, had prevalence rates of 12.8 and 0.2 per cent respectively.

There was very little difference in frequency of occurrence of the large and small races of *E. histolytica* in this plantation population. The small race was found in 52 persons or 5.6 per cent of the population as compared with 50 persons or 5.3 per cent harboring the large race. Two of these individuals were infected with both the large and small races. This finding is different from that of most workers since infection with large race *E. histolytica* is usually more prevalent than with small race.

As shown by table 1, familial prevalence rates were much higher than individual, a fact easily explained since the presence of one infected member placed a family in the infected category. Thus, *E. histolytica* was found in one-fourth of the families, *E. coli* in well over a third, *E. nana* in almost two-thirds, and *Giardia* in one-fifth.

TABLE 1. Prevalence rates for intestinal parasites in a negro plantation population in the Yazoo-Mississippi Delta.

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*Contribution from U. S. Department of Health, Education, and Welfare, National Institutes of Health, National Microbiological Institute, Laboratory of Tropical Diseases located at the Medical School of the University of Tennessee, 874 Union Avenue, Memphis 3, Tennessee.

TABLE I

	INDIVIDUALS			FAMILIES		
	Ex'd. No.	Inf'd. No.	Inf.'d Pct.	Ex'd. No.	Inf'd. No.	Inf'd. Pct.
E. histolytica	935	100	10.7	227	58	25.5
E. coli	935	178	19.0	227	89	39.2
E nana	935	282	30.2	227	136	59.9
I. butschlii	935	19	2.0	227	17	7.5
G. lamblia	935	120	12.8	227	44	19.4
C. mesnili	935	2	0.2	227	2	0.9
A. lumbricoides	935	11	1.2	227	7	3.1
N. americanus	935	2	0.2	227	2	0.9
H. nana	935	1	0.1	227	1	0.4

Sex and age prevalence. The prevalence rates by sex of host for the three common amebae and *G. lamblia* are shown in the graph in figure 1. *I. butschlii* and *C. mesnili* were so infrequently found that they are not included. The females had slightly higher prevalence rates for each of the parasites; however, the difference in prevalence in females and males was very small for *E. histolytica* and for *G. lamblia.* Although the prevalence by sex is not greatly different for the amebae, we have found in other studies similar slightly greater prevalence in the females, and believe this finding is not due to chance.

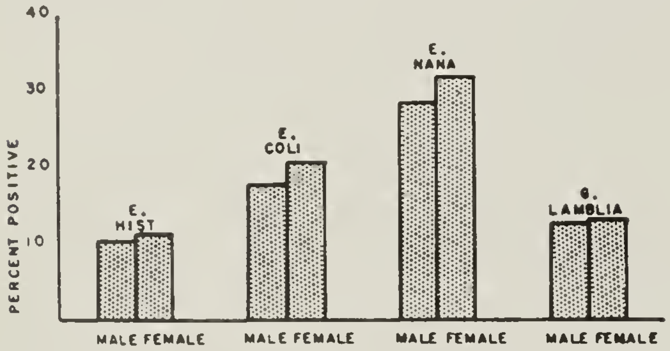

Figure 1. Prevalence rates by sex of host for infections with the intestinal protozoa in the Yazoo-Mississippi Delta region.

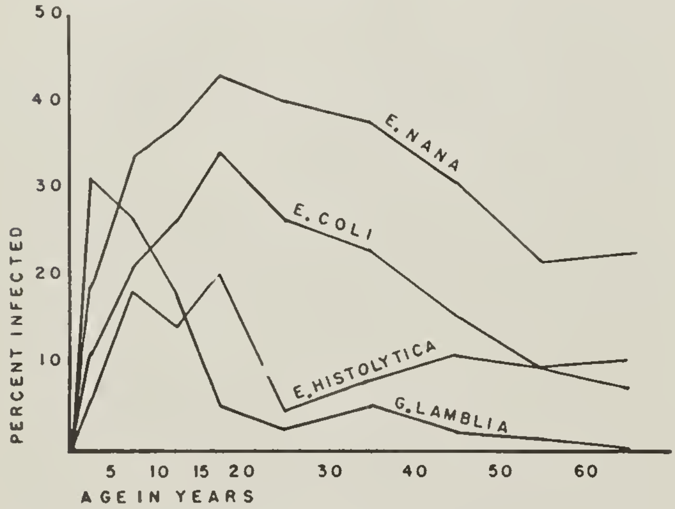

Figure 2. Age prevalence rates for the intestinal protozoa of the Yazoo-Mississippi Delta region.

The occurrence of these same parasites by age of host is represented graphically in figure 2. The infections with intestinal amebae showed marked age distributional pattern similarities. All showed their highest prevalence in the 15 to 19 years age group, followed by a sharp drop for *E. histolytica* and *E. coli* and a gradual drop for *E. nana.*

G. lamblia was most prevalent in the group under five years of age, dropping rapidly to a low rate of occurrence in adults, and disappearing altogether in the oldest age group. This is in agreement with most studies as *Giardia* usually has its highest incidence in the youngest children.

Because of their infrequent occurrence the age prevalence of the other parasite species was not studied.

Prevalence of helminth parasites: The occurrence of intestinal worms in this plantation population was extremely infrequent (see table 1). *Ascaris lumbricoides* was found in only 1.2 per cent of the people examined; hookworm and *Hymenolepis nana* were delete found in 0.2 and 0.1 per cent of the population. Their occurrence in families was correspondingly infrequent.

Comparative parasite prevalence in Yazoo-Mississippi Delta and West Tennessee: This laboratory recently completed an intensive study of a rural community of Fayette County, Tennessee (Eyles, Jones, and Smith, 1953). Since technical methods and epidemiological protocols were identical with the present study direct comparison can be made. The prevalences observed are compared in table 2.

The Negro community of Fayette County is very similar to the Delta Negro community socially. Due to the superior soil the Delta Negroes are undoubtedly more prosperous; however, this prosperity is not reflected greatly in environmental conditions in the community. Although the extreme of proverty often observed in Fayette County was not seen frequently in the Delta, the overall manner of living is very nearly the same in the two communities. The principal difference in the communities is that the Delta is characterized by a very rich alluvial soil; whereas, in Fayette County the soil is largely non-alluvial, poorer, and more subject to destructive erosion.

In light of the above it is not surprising that nearly identical parasite rates were observed. The only marked difference seen was the higher prevalence of Ascaris in the west Tennessee group and the higher prevalence of *Giardia* in the Mississippi group. The former difference is most likely due to the existence in Fayette County of a number of "*Ascaris* families" no counterpart of which existed in the Delta community studies.

Although extensive data on sanitary and environmental conditions were collected in the Delta, no correlations are included in this report due to the similarity to the west Tennessee findings. Interested persons can consult the latter report. In general, the cleaner families and those with the best sanitary facilities were least frequently parasitized but the differences were not marked.

TABLE 2. Comparative parasite prevalence in the Yazoo-Mississippi Delta and West Tennessee.

	Per cent infected (with standard error)		
	Yazoo-Miss. Delta	West Tenn. (Negro pop. only)	P-value
E. histolytica	10.8±1.0	10.9±0.6	.81
E. coli	19.0±1.2	21.9±0.8	.81
E. nana	30.2±1.5	29.5±0.9	.69
I. butschlii	2.0±0.4	3.7±0.6	.004
G. lamblia	12.8±0.1	8.9±3.2	.002
C. mesnili	0.2±0.1	0.6±0.1	.06
A. lumbricoides	1.2±0.35	4.6±0.42	.0000006
Hookworm	0.1±0.1	0.1±0.06	1.00
H. nana	0.2±0.1	0.6±0.1	.27

DISCUSSION

The present study demonstrates that *E. histolytica* is a frequent parasite in the Yazoo-Mississippi Delta Negro community. Our investigation did not determine the frequency of disease caused by this parasite; however, it was quite evident that most of the infected individuals were apparently healthy carriers. It must be added that, if even only a small proportion of the carriers are symptomatic, the parasite is important owing to its great frequency.

The rates for the non-pathogenic protozoa are correspondingly high, but, on the basis of this study, it would appear that worms are of minor importance in this community.

It should be pointed out that the technical procedures followed do not reveal all cases of infection in the community. The three examinations given probably show the majority of cases but the real rate of infection in the community is probably higher than the rates given here.

Few other Mississippi studies of the intestinal parasites, particularly *E. histolytica,* are available for comparison. Among the few is the report of Nickel (1942) who examined one specimen from each of 50,000 individuals from throughout the state. Due to differences in the technique and the number of examinations it is impossible to ascribe any significance to the difference between the rate of 4.4 per cent for *E. histolytica* which she observed and our rate of 10.7 per cent.

SUMMARY

A study of *Endamoeba histolytica* and other intestinal parasites in 935 Negroes comprising 227 families living on plantations in the Yazoo-Mississippi Delta resulted in the following findings:

1. Prevalence rates by individuals were *Endamoeba histolytica,* 10.7 per cent; *Endamoeba coil,* 19.0 per cent; *Endolimax nana,* 30.2 per cent; *Iodamoeba butschlii,* 2.0 per cent; *Giardia lamblia,* 12.8 per cent; and *Chilomastix mesnili,* 0.2 per cent.

2. Prevalence rates by family were *E. histolytica,* 25.5 per cent; *E. coli,* 39.2 per cent; *E. nana,* 59.9 per cent; *I. butschlii* 7.5 per cent; *G. lamblia,* 19.4 per cent; and *C. mesnili,* 0.9 per cent.

3. The parasitic helminths occurred infrequently. The prevalence rates were *Ascaris,* 1.2 per cent; hookworm, 0.2 per cent and *Hymenolepis nana,* 0.1 per cent. The family rates were correspondingly low.

4. The female sex had higher prevalence rates for the intestinal protozoa than the male but the difference was very slight for *E. histolytica* and *G. lamblia.*

5. The intestinal amebae were most prevalent in the 15 to 19 years age group while *G. lamblia* occurred most frequently in the group under five years of age.

6. Comparison with a Negro population living under very similar conditions in Fayette County, Tennessee, showed almost identical parasite rates in the two communities. Higher prevalences of *Ascaris* in the West Tennessee group and of *Giardia* in the Mississippi group were the only marked differences.

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1953 A study of *Endamoeba histolytica* and other intestinal parasites in a rural West Tennessee community. Am. J. Trop. Med. and Hyg., 2: 173-190.

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Conflicts and Attitudes and Their Relationship to Gynecology*

HOWARD A. NELSON, M.D.
Greenwood, Miss.

UNDERSTANDING ILLNESS and treating sick people consists of something more than a knowledge of disease. Woman, in time past, has been studied from many viewpoints. She has been torn apart both anatomically and physiologically and medical science of today has been extended because of a desire to understand all of the parts and activities of the human body, both in sickness and health.

In order to cure the human body, it is necessary to have a knowledge of the whole of things. But to understand the knowledge of the whole of things today with all our modern social complexities is not the same as it was 2,400 years ago when Hippocrates made the statement.

It is with this purpose that I shall attempt to correlate the patient's conflicts and the physician's attitude and their bearing on gynecological disorders. Far be it from me to belittle our specific measures for specific diseases. It is with a sense of humility, reverence, and pride that I accept the progress made by our forebears in alleviating pain and removing the scourges from the earth.

We, as physicians, must search further into the realm of emotional and psychic traumata in order to transcribe the science of medicine into a true art. We must listen to the patient's history, let her tell her story in her own words, establish rapport before hurriedly making a pathological diagnosis and allowing her to make a sacrificial offering of her pelvic organs in order to satisfy our own ego. We must remember that there are some diseases which we cannot diagnose, others which we can diagnose but cannot cure, and we should be ever mindful of these facts and lend an attentive ear to our patient's story.

Dysmenorrhea with all the various therapeutic measures continues to be treated empirically. The problem of cure of this unhappy affliction is age old and its solution is still not at hand, although much progress has been made. The psychic factors that play a part in primary dysmenorrhea cannot be minimized. The establishment of good mental health in the dysmenorrheic patient is an essential prerequisite to treatment. This requires an honest and simple explanation of the physiology of menstruation and a determined disengagement of the erroneous misconceptions that the average woman has about the menstrual function. The physician who seeks solace in the advice dysmenorrhea will disappear with marriage or childbirth will most often be disappointed.

The barren marriage is a problem as old as mankind. In widely separated cultures and generations, the childless woman was the victim of superstition, fear, prejudice, and through the ages to our generation, the stigma of barreness fell upon the female. Concepts change slowly and even today studies on the husband are inadequate and it is usually the wife who seeks the help. The mental attitude of the individual is important. We must make sure that the cure will not initiate anxiety and tension which may defeat our purpose. How many sterile couples can you recall where the adoption of a child has brought on many psychosomatic disturbances both to the mother and the child?

This year marks the one hundredth anniversary since the first successful abdominal hysterectomy was done. Of the first fifteen subjected to this operation, only three survived, a mortality of 80 per cent. Today we have reports which indicate a mortality of .04 of 1 per cent in better than 6,200 consecutive hysterectomies, all of which are concrete evidence of the progress in anesthesia, surgical technics, antimicrobial therapy and a more rugged species of womanhood. The current widespread use of the hysterectomy as a cure-all for psychosomatic disorders proposes the question: Are these all necessary? Here is where the physician should re-evaluate his attitude. Is he recommending this for pain alone? And if he is, it will bear further study as pain is often a difficult symptom to evaluate. The cause may be urologic,orthopedic, or related to the colon. Psychosomatic factors and constitutional inadequacies may require investigation. At least your patient deserves a more conservative attitude, should have a diagnostic curettage before concluding a hysterectomy is necessary. And if you gentlemen are honest with yourselves and replace foresight with hindsight and correlate the pathologist's report with what you expect to find, you may be surprised that a much less radical procedure was all that was necessary. Are we following the line of least resistance and not studying her distorted personality which may be due to fear, disappointments, sense of inadequacy, maladjustment, or any of the intangible stimuli which make the patient take refuge in the sanctum of physical ailments? It is then that they fall prey to the quacks and swell the coffers of the ill-advised surgeon. Gynecological surgery occupies a foremost position of surgery done in the general hospital. The idea that the Greeks, Hippocrates, Galen and Celsus had concerning hysteria, a disease peculiar to women and due to a distorted uterus, is oftentimes the only basis for the indication for the ever popular hysterectomy as done today.

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*Presented before the Section on Obstetrics and Gynecology at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953

These unfortunate women are subjected to repeated laparotomies, as suspension, presacral neuronectomies, oophorectomies for physiologic cysts, hysterectomies for endometrial hyperplasia, fibrosis or small asymptomatic fibroids. They deserve a more careful study on the part of the physician. It is well that we physicians adhere strictly to proper indications for each surgical procedure in order that we may not be liable for adverse criticism for excessive or unnecessary surgery on our patients. We must be cognizant that some patients like to suffer, to be cut and mutilated. There are some people who look upon disease of the body as the best and most precious thing in life. They suffer by it, yet do they live upon it. They complain of it to other people, attract it to their neighbors and use it to obtain sympathy, and without it, they are nothing at all. Take away from them this disease, cure them and they will be unhappy because they will be deprived of their only means of living.

The physician should operate when necessary. This decision must rest on the good judgment of the surgeon. If the suspected disorder is life-threatening, then it is difficult to avoid surgery. But exploratory or pain-relieving surgical treatment can be postponed until the patient's personality is better understood. The attitude of the physician and the conflicts of the patient attributed to the menopausal syndrome will bear revision. No conscientious physician should attribute irregular vaginal bleeding during the fourth or fifth decade of life as menopausal until a careful study of the patient has been made. The most important symptoms of the menopause are psychologic. The menopause itself is a definite landmark in a woman's life that heralds the beginning of old age. Women who have not prepared themselves for this time, face the era with fear and antagonism. They feel that they are no longer attractive or desired, and if childless, married or celibate, this is the final blow to their dreams. If, on the other hand, marriage has been fruitful, the children are becoming independent. The husband is usually at the peak of his career and devotes his interests primarily to his work. At times this interest is so profound that the wife becomes suspicious of a younger woman in his life whether justly or injustly. If one could see as the husband does, the mating material with which he has chosen to spend his cohabital time—hair rolled up and held in place with metal bobby pins, complexion void of all make-up, and a nightgown which is a relic of better days gone by—then one might understand the Kinsey Report of male misbehavior.

Physical ugliness in women and inefficiency in men are great breeders of disease. They represent the causes of frustration which may be apparent to the observer, but whose existence will never be admitted by the victim. No one can observe sick humanity for any period without being profoundly impressed by the part which their mirrors play in the lives of their patients.

The menopause has been the topic of much discussion both scientific and social for a long time. And in spite of the volumes written, there is still a lot of confusion and unsound thinking on the subject. It would be well for the doctor to remember to listen sympathetically to the woman's history, examine her carefully and give her estrogen only to control her vasomotor disturbances. The patient should be told that this is a physiological process marking the time in her life when she ceases to menstruate and can no longer conceive. She must be told not to expect too much of the people amongst whom she dwells and to school herself not to expect too much of life, learning that we all aim at the unobtainable and must be content at finding the broken pieces, accepting courageously disappointments, defeats, and joyously fighting on, only with the acquisition of quiet wisdom as our reward.

In these few moments, I have attempted to arouse your interest in a few of the everyday problems that present themselves to the physician who treats diseases in women. If you have restricted your thinking to the *in situ* pathology, then you have failed to grasp the patient as a whole in your thinking. Your opportunity is still great—the harvest is truly plenteous and our laborers are scarcely sufficient to meet the demands. "Knowledge comes, but wisdom lingers on"—and again understanding illness and treating sick people consists of something more than the knowledge of disease.

DISCUSSION

Dr. Walter H. Simmons, (Jackson)—I wonder if you all noticed that in this paper Dr. Nelson did not advocate a single procedure nor mention the name of a single drug. Certainly the material for this paper did not come from a textbook. I expect Dr. Nelson's experiences were searched and studied in such detached moments as while looking over the distal end of a cane pole or perhaps while gazing into the embers of a wood fire. Wherever and however they came about, he has done the difficult job of reducing to words his philosophy and concept of psychosomatic medicine as pertains to gynecology.

I wish only to stress the importance of good mental hygiene in the prevention of primary dysmenorrhea. By this, specifically, I mean placing knowledge at the disposal of the child. We know, of course, every child is going to get information about sex. If the parents don't supply proper information he probably will get damaging misinformation from older associates. When and how much information should we offer? Every question at every age should be answered factually and frankly to the child's satisfaction. He doesn't want or need a course in biology. He just wants a civil answer to a civil question. What is more natural than for a four-year-old to ask, "Where did I come from?" After that, the wise parents will stay two or three pages ahead of him so that next they can answer how he got out! The older child should, in addition, be given reading material suitable to his age. I recommend the sex education pamphlets published by the American Medical Association. Five booklets, each written for a different age, comprise the set which sells for one dollar.

Doctors' daughters are in a singularly good position to receive proper information. Thinking, then, the incidence of dysmenorrhea among them would be very low, two weeks ago I sent out a questionnaire to Jackson doctors whom I knew to be fathers of daughters of menstruating age. The answers confirmed my beliefs, or, as you might guess, I wouldn't be reporting them here. Concerning sex education each physician was asked to check whether the child had had 1) little or no such education; 2) been answered frankly all sex questions as they arose; 3) been supplied with good sex literature. The reply cards were purposely printed to prevent identity. Ten per cent didn't bother to answer and ten per cent had them so cluttered up with qualifications I couldn't classify them. Of those remaining all replies stated they had frankly answered all questions as they arose and in addition, 75 per cent of the doctors had supplied suitable literature.

Dysmenorrhea was classified as, 1) *none or slight*, no medication or nothing stronger than aspirin usually used; 2) *moderate*, medication usually used but no time lost from play or work; 3) *severe*, usually in bed one or more days each flow. The answers to this question were very interesting. There was not a single case of *severe* dysmenorrhea, even among the replies not counted because of qualified answers. Seventy per cent were in group one. They required either nothing or nothing stronger than aspirin, while slightly less than one third or 30 per cent required something stronger than aspirin but lost no time from work or play.

In closing I want to repeat a statement made by Dr. Nelson: "We, as physicians, must search further into the realm of emotional and psychie trauma in order to transcribe the science of medicine into a true art".

Dr. Virginia S. Stacy, (Ruleville)—Dr. Nelson has presented a subject worthy of our serious consideration. Possibly in all of medicine there is no one field in which there is a greater need for improving our attitudes, knowledge and treatment than in gynecology. Especially as regards the menopausal patients, much needs to be done to aid them in their adjustment to this period of changing physiology.

Perhaps our greatest need is for an educational program to teach women the true facts about the menopause. "Change of life" is a part of the old wives' tales handed down through generations as something to be dreaded, a time of misery and discomfort. Women should be taught to regard it merely as another stage in life which at times may be somewhat annoying but which is a normal physiological process without undue significance. The cessation of menstruation should be accepted with calm adjustment and without the emotional storms and upheavals so frequently seen. If the complete process can be explained in simple terms so that the patient understands what to expect, instead of living for years in dread of the horrible things that must happen to her during "the change", then there will be fewer patients complaining of menopausal symptoms. By aiding in a widespread educational program as well as by trying to inform our own patients, we can do much to remove this dread and fear of the menopause.

I believe that one of the greatest abuses in medicine today is the indiscriminate use of estrogens to relieve menopausal symptoms and symptoms attributed by the patient to the menopause. Patients frequently come complaining of such symptoms and asking for injections of "theelin" even though they are still having regular normal menses. Obviously their complaints cannot be due to a lack of ovarian hormones. Many patients who demand estrogens for relief of nervousness and "feeling bad" have no true vasomotor symptoms and cannot actually be helped by estrogens. In about 90 per cent of these patients relief can be obtained by a thorough explanation of the physiological processes involved, along with reassurance and mild sedation. In the remaining 10 per cent symptoms are severe enough to require estrogens for relief. However, it has been demonstrated that stilbestrol by mouth in doses of 0.5 mg. or less is adequate for control of "hot flashes", at far less expense to the patient than when injections are given. The patient should be thoroughly instructed in the proper usage of estrogens and cautioned about over-dosage so as to avoid the unfortunate episodes of withdrawal bleeding sometimes seen. The patient should understand that taking estrogens simply "prolongs the agony" by delaying her adjustment to the lack of ovarian hormones and that such treatment should be used only for severe symptoms.

After explanation of the physiology of the menopause, proper sedation and other measures as needed for relief of symptoms our next duty is to make a thorough examination to rule out true pathology. We must not overlook organic disease in our interest in the psychosomatic aspects of the menopause. We should be more suspicious of irregular bleeding and must be on the alert to question our patients about such occurrences. There have been entirely too many carcinomas found too late for cure because the patient thought she was "just going through the change", and did not seek treatment in time. Too often the physician is at fault by his failure to do a thorough pelvic examination, or to take biopsies if indicated. Such procedure should be part of our routine physical examinations.

The final step in the treatment of menopausal patients is to reassure them that many years of normal sexual and family life are before them and teach them that the menopause doesn't mean the end of life, but is simply another stage in the passage of time.

Presenting in the pages that follow:

BOOK SECTION

Atlas of Rush Pin Technics

LESLIE V. RUSH, M. D.
Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

This is the second of a series of monthly installments to be published in THE MISSISSIPPI DOCTOR during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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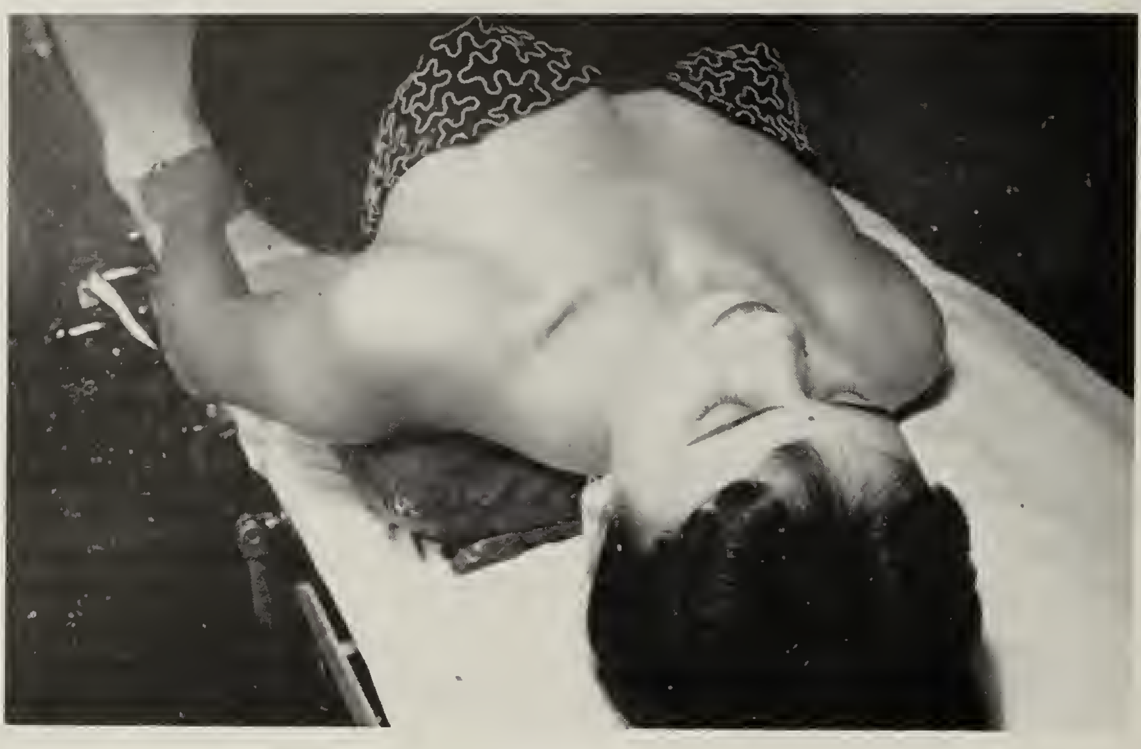


Clavicle

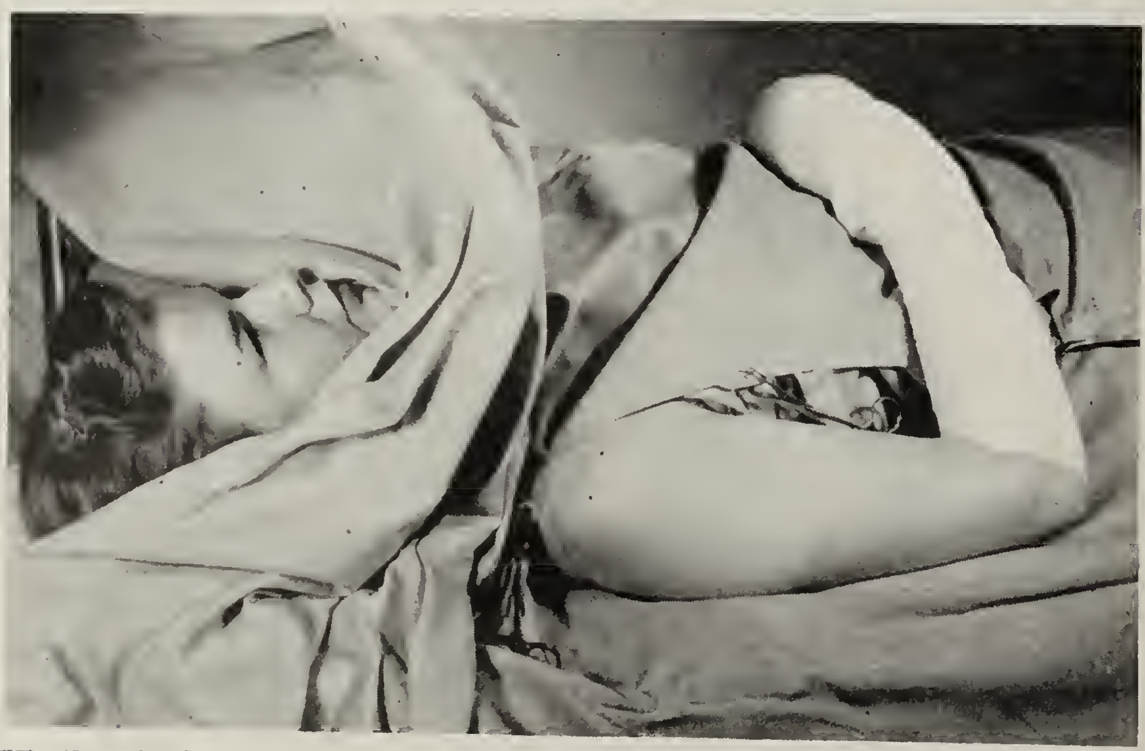
Patient recumbent on ordinary operating table. Affected shoulder near edge of table. Shoulder elevated by sandbag. This procedure makes it easier to drill axially into the two fragments of the clavicle.

4

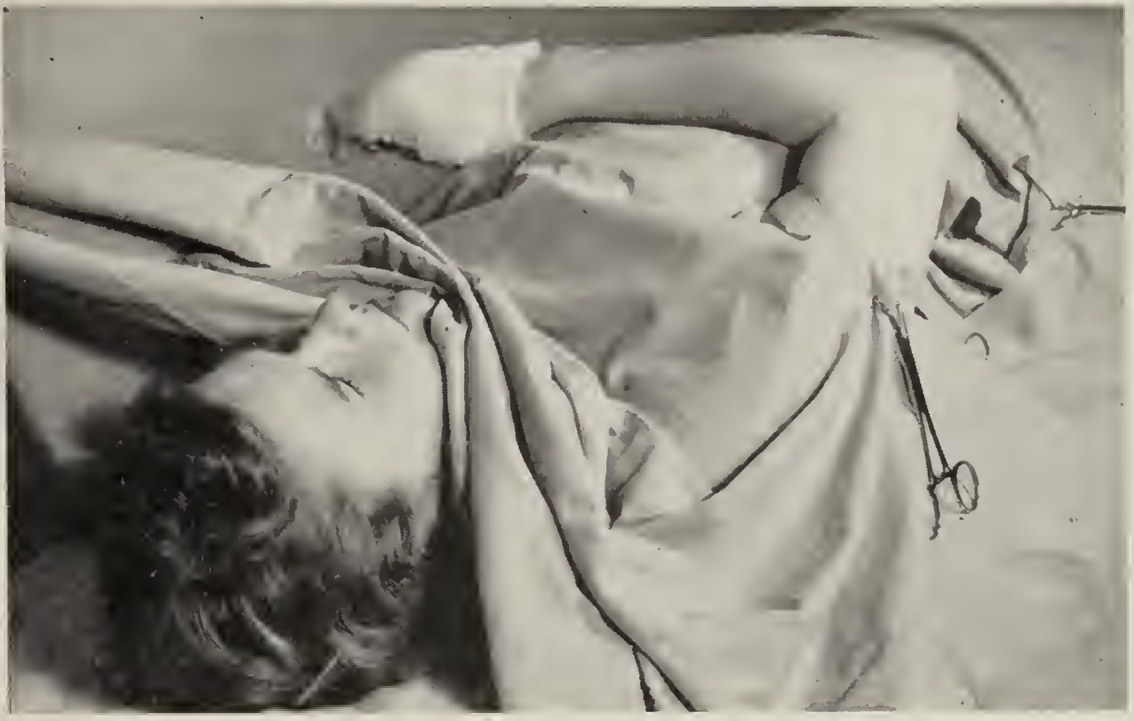
POSITION OF PATIENT

Shoulder and Humerus

Simple recumbency. Arm at the side. Forearm and hand draped so that the extremity can be manipulated.



NOTE: *For check-up x-rays on the upper extremity the x-ray film is slipped beneath the sterile drapes.*

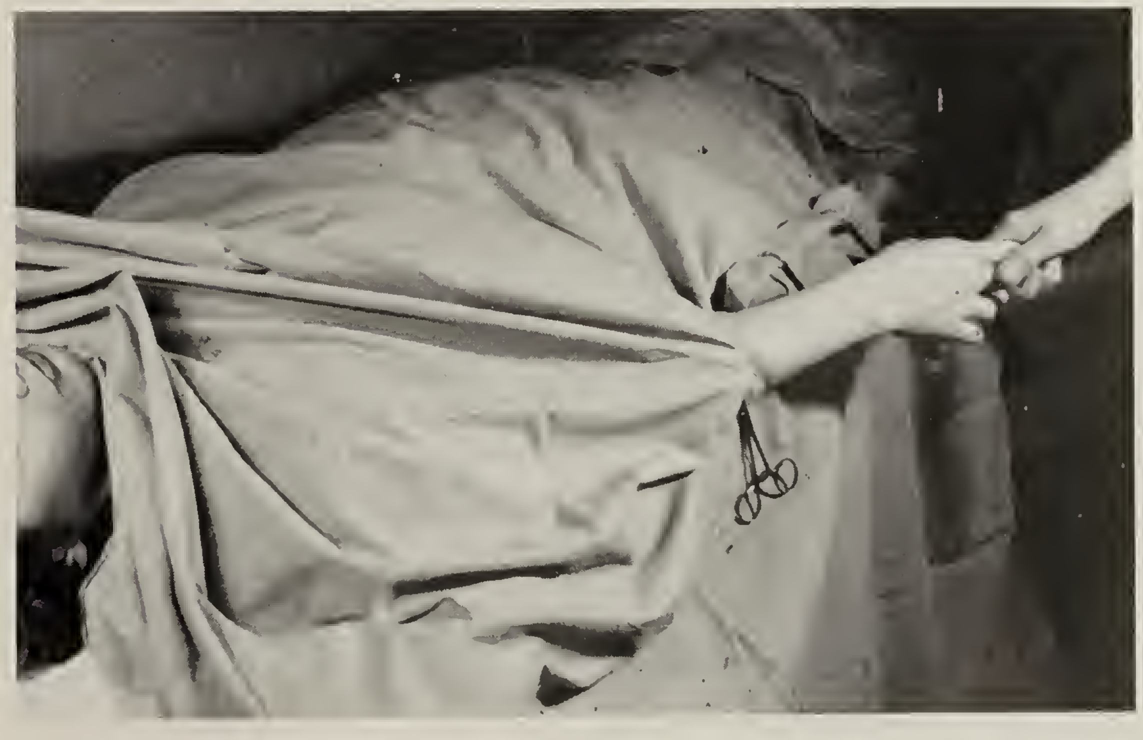


Forearm and Elbow

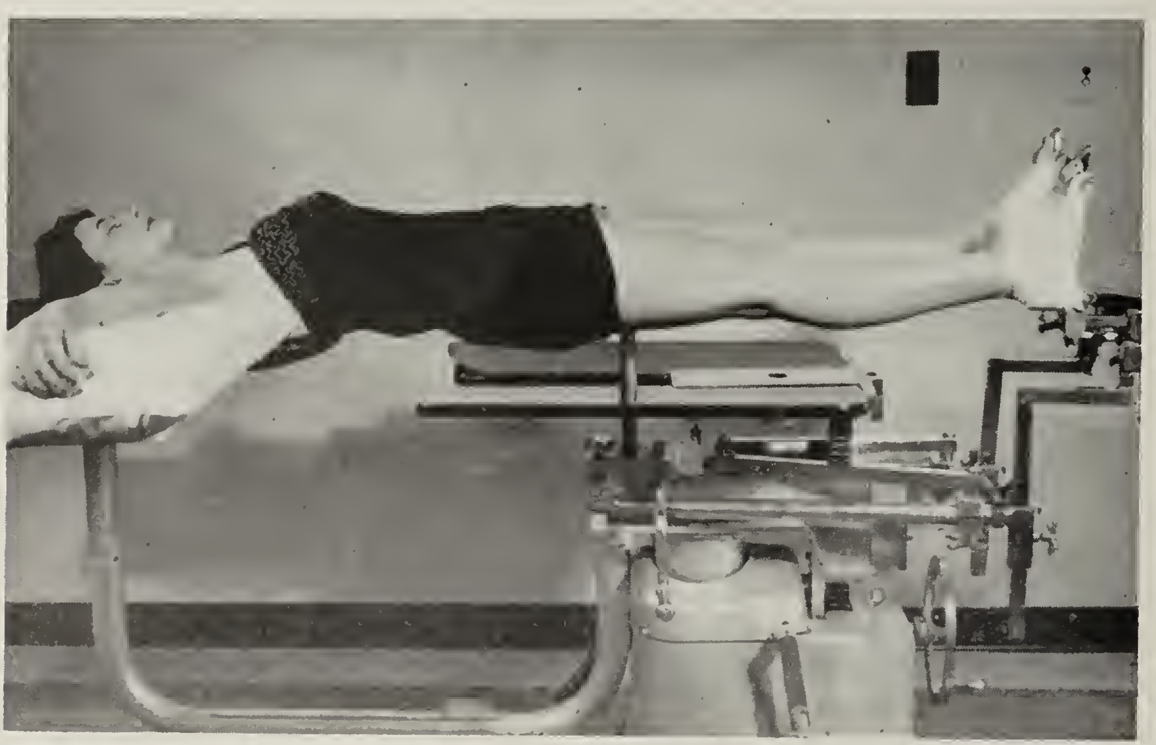
Simple recumbency. Hand draped separately to permit manipulation. Forearm brought across patient's chest.

Wrist and Hand

Simple recumbency. Drapes clamped snugly about the forearm.



NOTE: *FRACTURE TABLE is not necessary for the surgical treatment of any fracture of the upper extremity.*

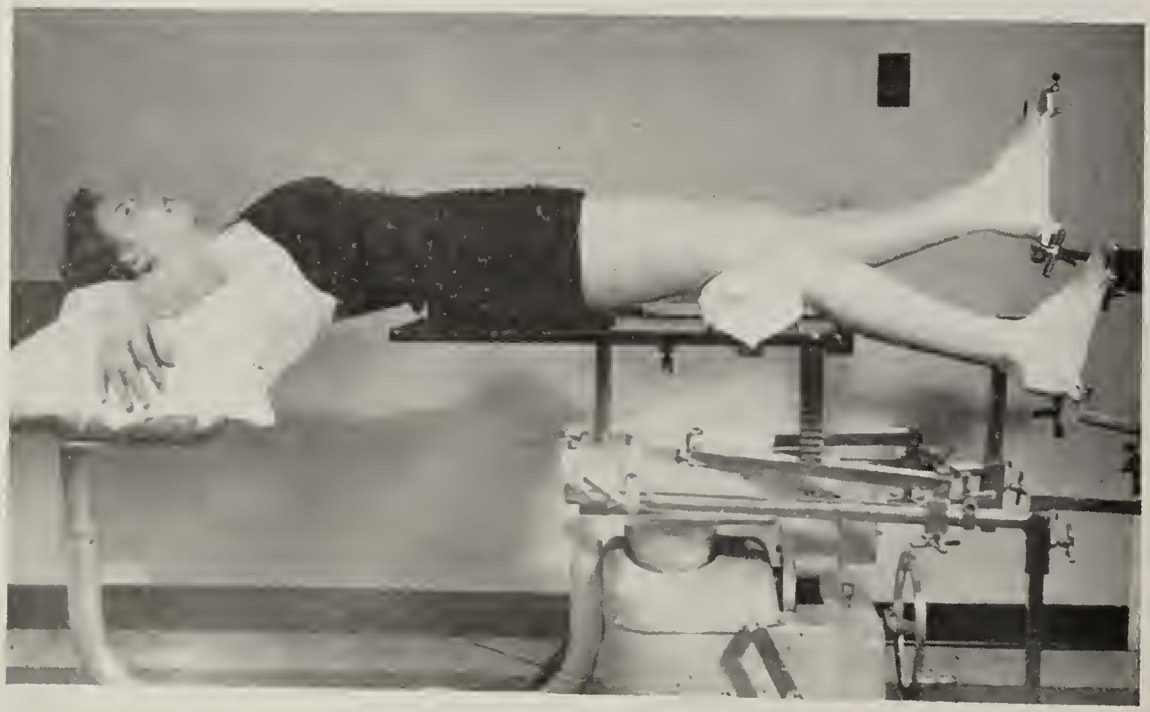


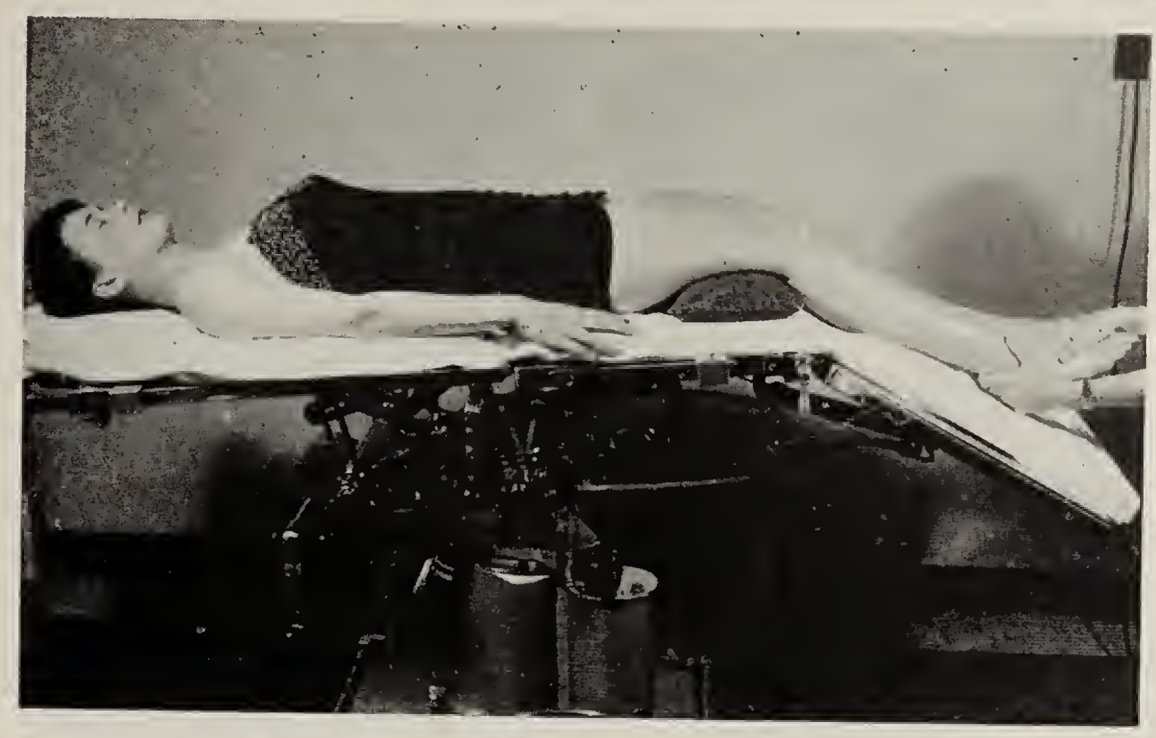
Femur Shaft

Simple recumbency on fracture table. Thigh adducted. Upward counter traction beneath lower fragment desirable. Moderate, not strong, traction. Sufficient traction to overcome shortening only.

Femur, Supracondylar

Same as upper picture except knee flexed at least 35 degrees. This aids reduction and makes it easier to identify landmarks. Capsule is less apt to be compromised in this position.





Femur, Supracondylar

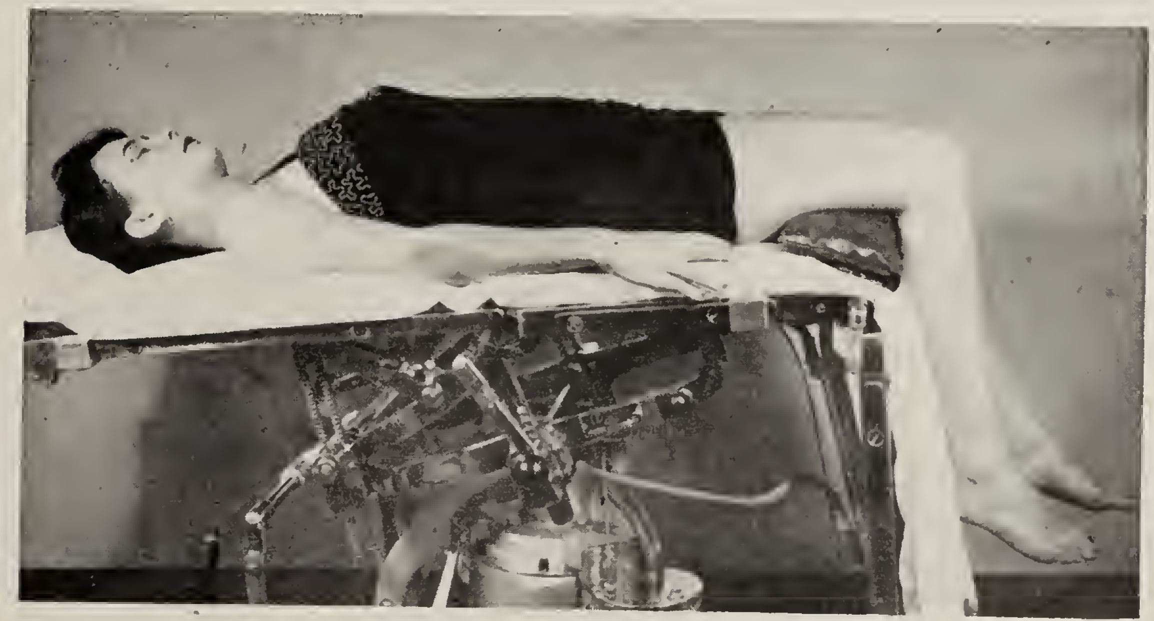
Similar to supracondylar femur opposite page, using ordinary operating table and manual traction.

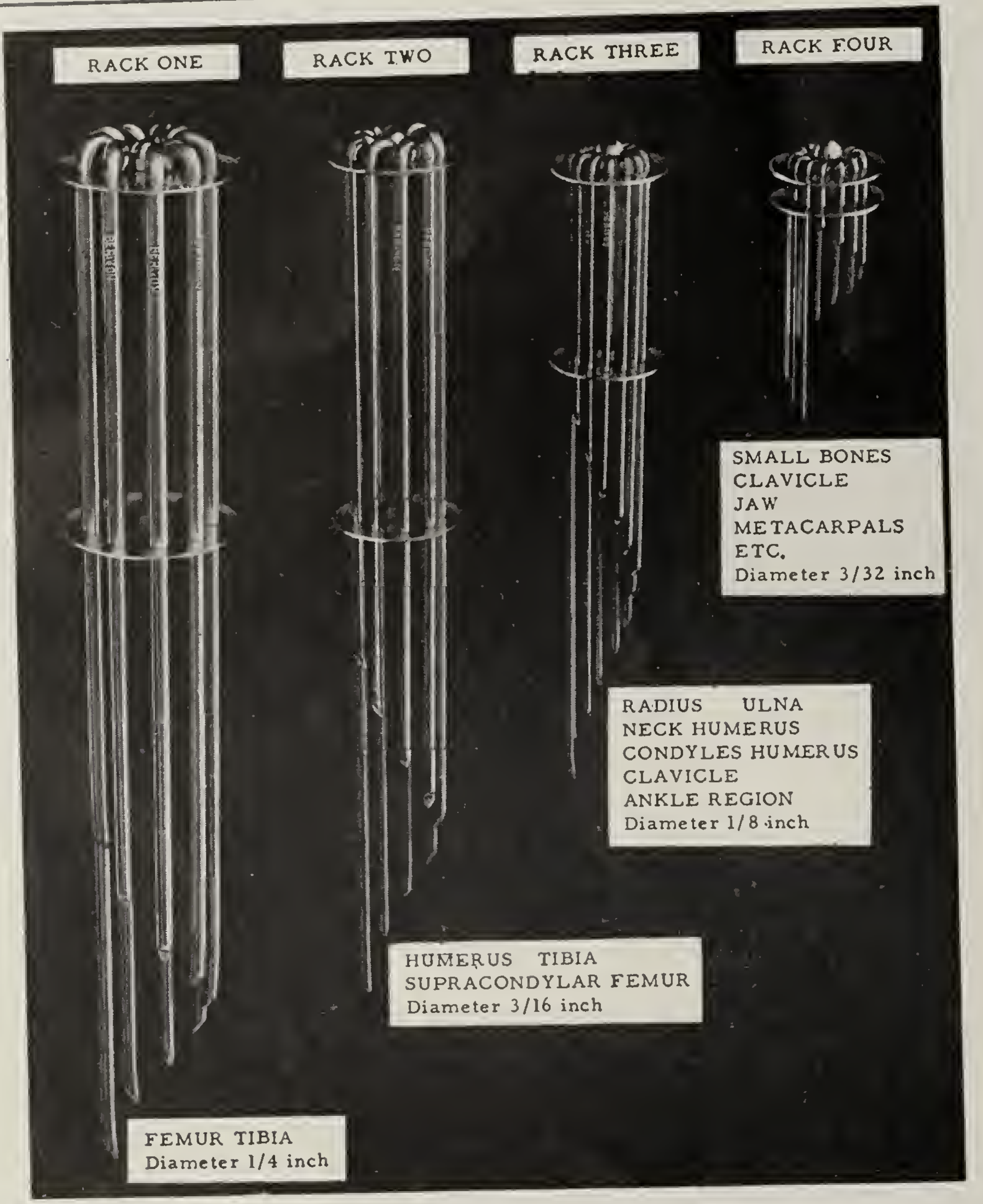
Tibia, Shaft and Condyles

Simple recumbency with or without fracture table. Knee flexed 90 degrees. Traction on foot.

ANKLE AND FOOT: (Not shown). Simple recumbency. Toes covered with rubber glove.

NOTE: *In the lower extremity the fracture table is essential only in pinning the femoral shaft. The average fracture table is occasionally advantageous for the tibia, but is usually more trouble than it is worth.*




RACK ONE
RACK TWO
RACK THREE
RACK FOUR
SMALL BONES
CLAVICLE
JAW
METACARPALS
ETC.
Diameter 3/32 inch
RADIUS ULNA
NECK HUMERUS
CONDYLES HUMERUS
CLAVICLE
ANKLE REGION
Diameter 1/8 inch
HUMERUS TIBIA
SUPRACONDYLAR FEMUR
Diameter 3/16 inch
FEMUR TIBIA
Diameter 1/4 inch

COURTESY THE BERIVON COMPANY, MERIDIAN, MISS.

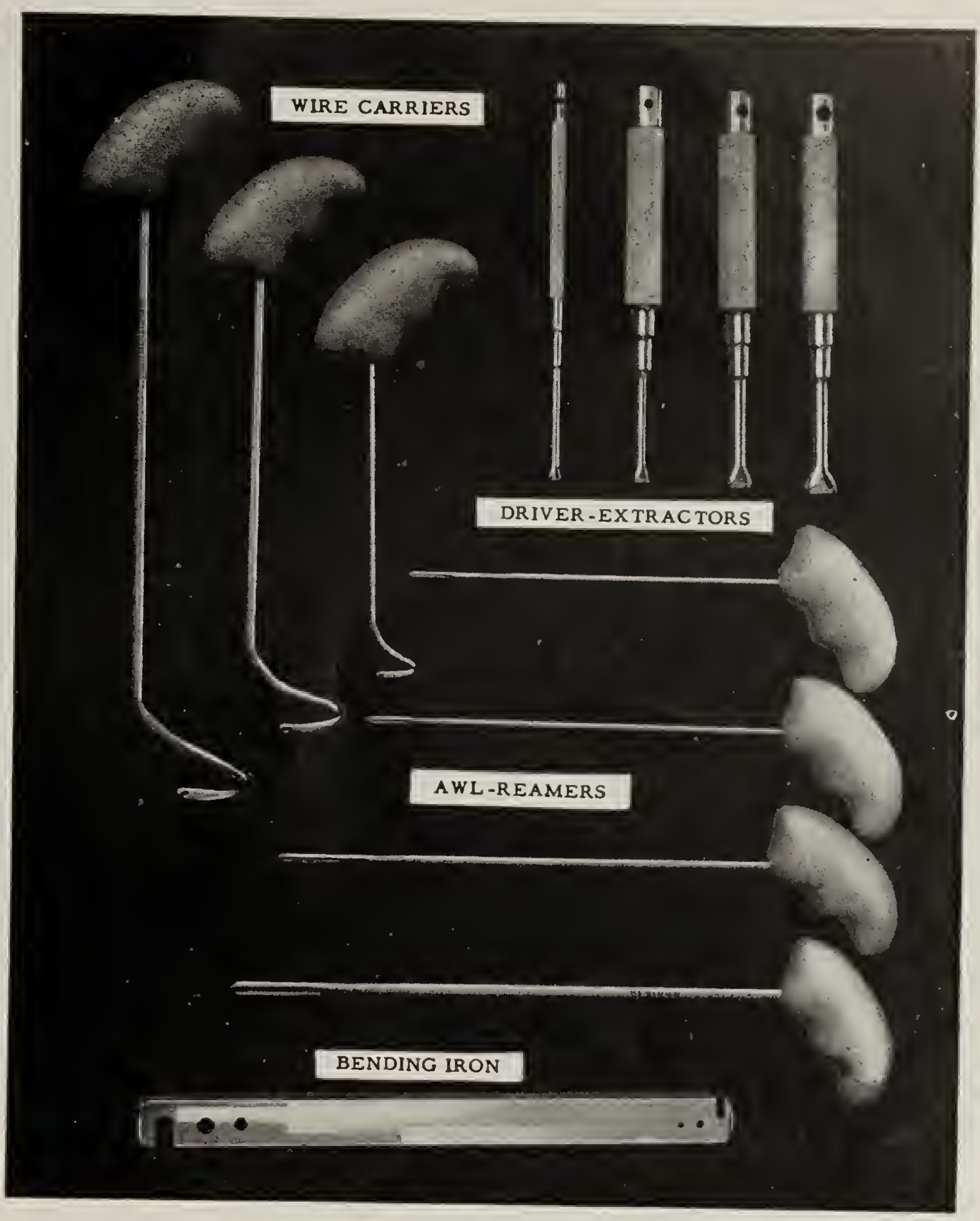
The Rush Pin Set

5

INSTRUMENTS

This set is adequate for practically all fractures. Rare individuals require smaller diameters for the forearm. This is unlikely in the aged, whose medullary cavities are usually large.

The pins are of one design for all long bones. However, for maximum surgical efficiency, it has been found that the temper of the rod must differ in the various diameters.

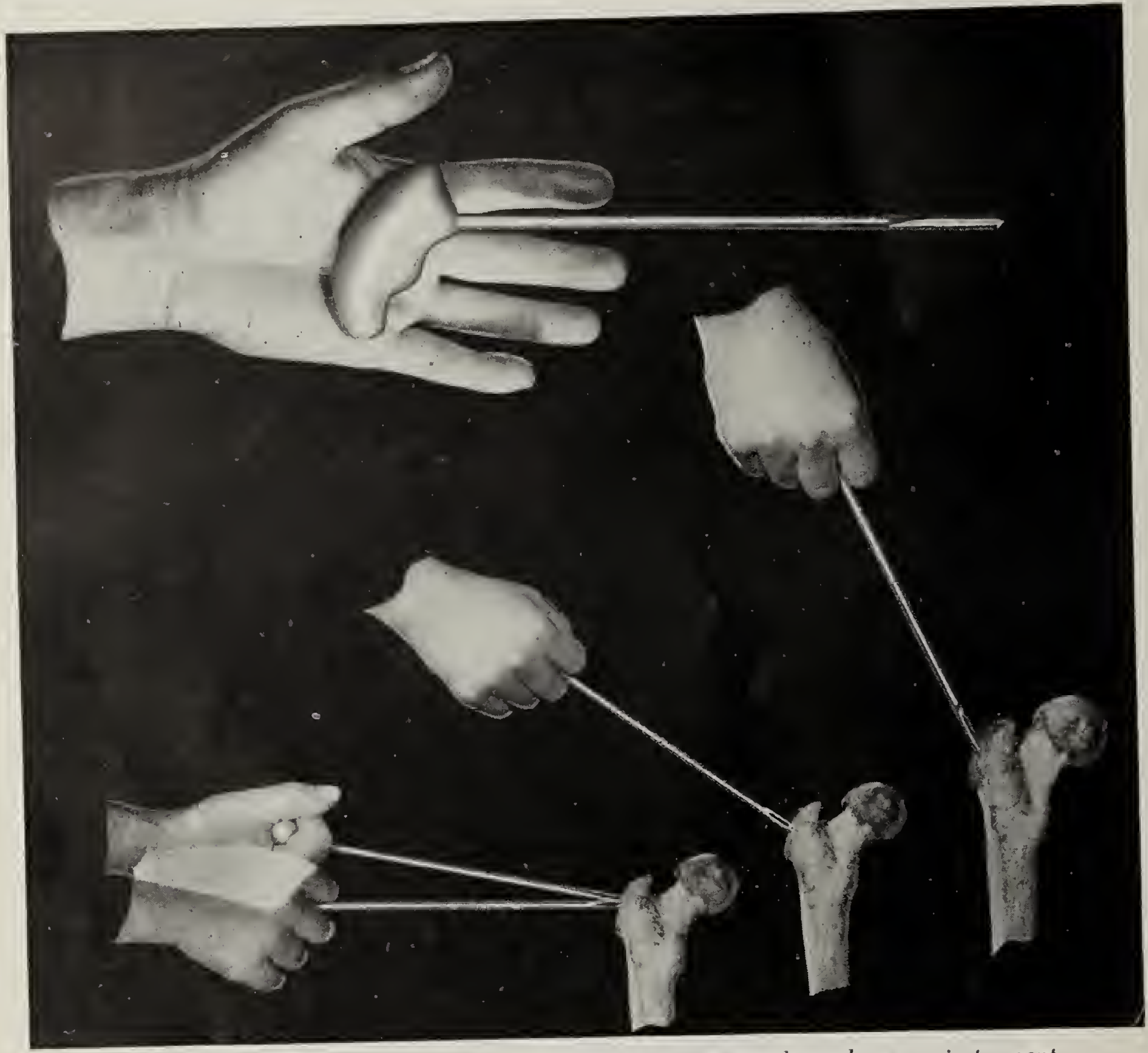

WIRE CARRIERS
DRIVER-EXTRACTORS
AWL-REAMERS
BENDING IRON

COURTESY THE BERIVON COMPANY, MERIDIAN, MISS.

"Luxury" Instruments

Special instruments are not essential. The above instruments facilitate the operation and make it more intriguing for the surgeon. The usual bone instruments are infrequently used, and bone clamps rarely.

A good drill or the awl-reamer, a bending iron, a mallet and a pair of pliers are essential. In the absence of the driver-extractor instrument an old bone gouging chisel is excellent to loosen the head for extraction.



Technic of making opening in the trochanter of the femur using the awl-reamer instrument.

6

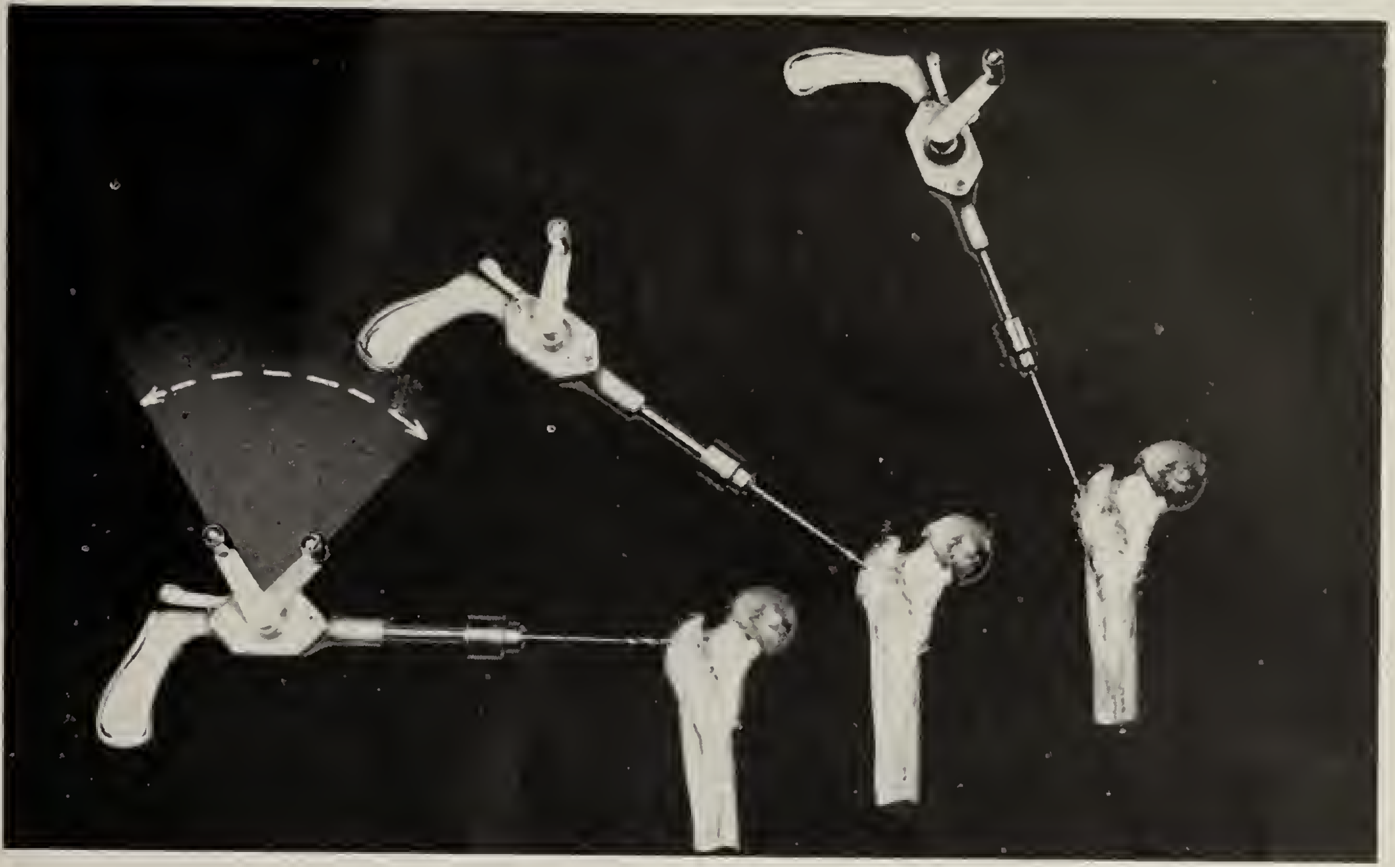
INSERTING THE PIN

Making an Opening

Large incisions are not necessary. The opening can be made and the pin introduced through a stab wound. Although the awl-reamer is much more efficient the hand drill can be used satisfactorily in its stead.

To use either instrument in a rotary fashion will enmesh the solf tissues, but rotating it back and forth in an arc of 180 degrees prevents this occurrence.

Hold the instrument vertical to the bone until the cortex has been penetrated. Do not drill deeply. Then gradually change the direction to an oblique one, so that the axis of the reamer or drill closely approximates the long axis of the bone, as the bone is more deeply penetrated. The drill or reamer should be of the same diameter as that of the pin to be driven. This assures better fixation and guards against migration of the pin into the bone.



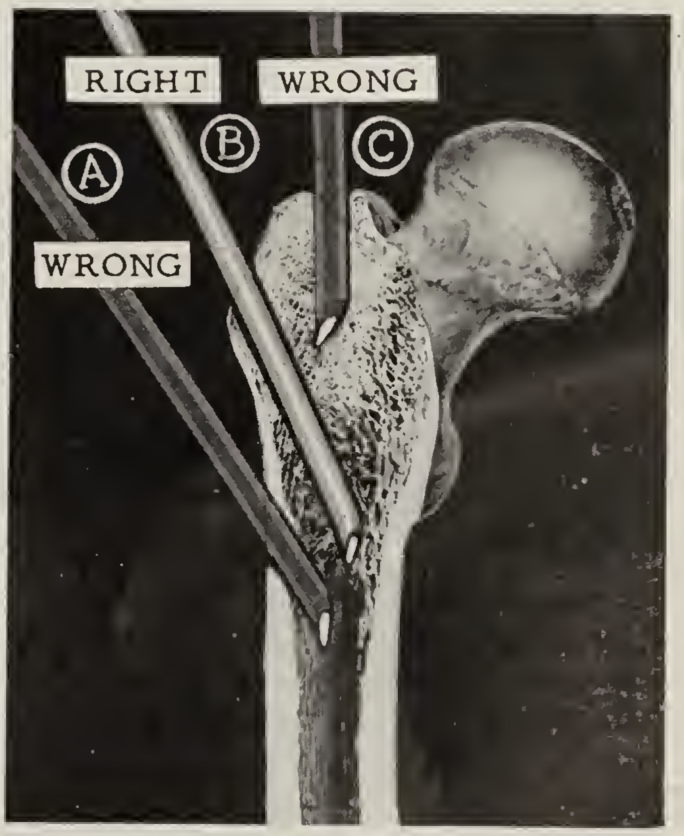
Technic of making opening in the trochanter of the femur using the hand drill.

The pin is nearly always introduced from the side of the bone, practically never from the end. This gives firm fixation on the proximal fragment to control rotation and to prevent backward migration of the pin.

In the adult it is rarely wise to attempt to introduce the pin through the thick cortical bone of the shaft. At the extremity of a bone, near the joint the cortical bone is thin allowing the opening to be made more accurately and the pin to be inserted with minimal danger of splitting the bone. In the aged or debilitated the cancellous bone at the extremity is soft and brittle, but in the young it is firm and dense.

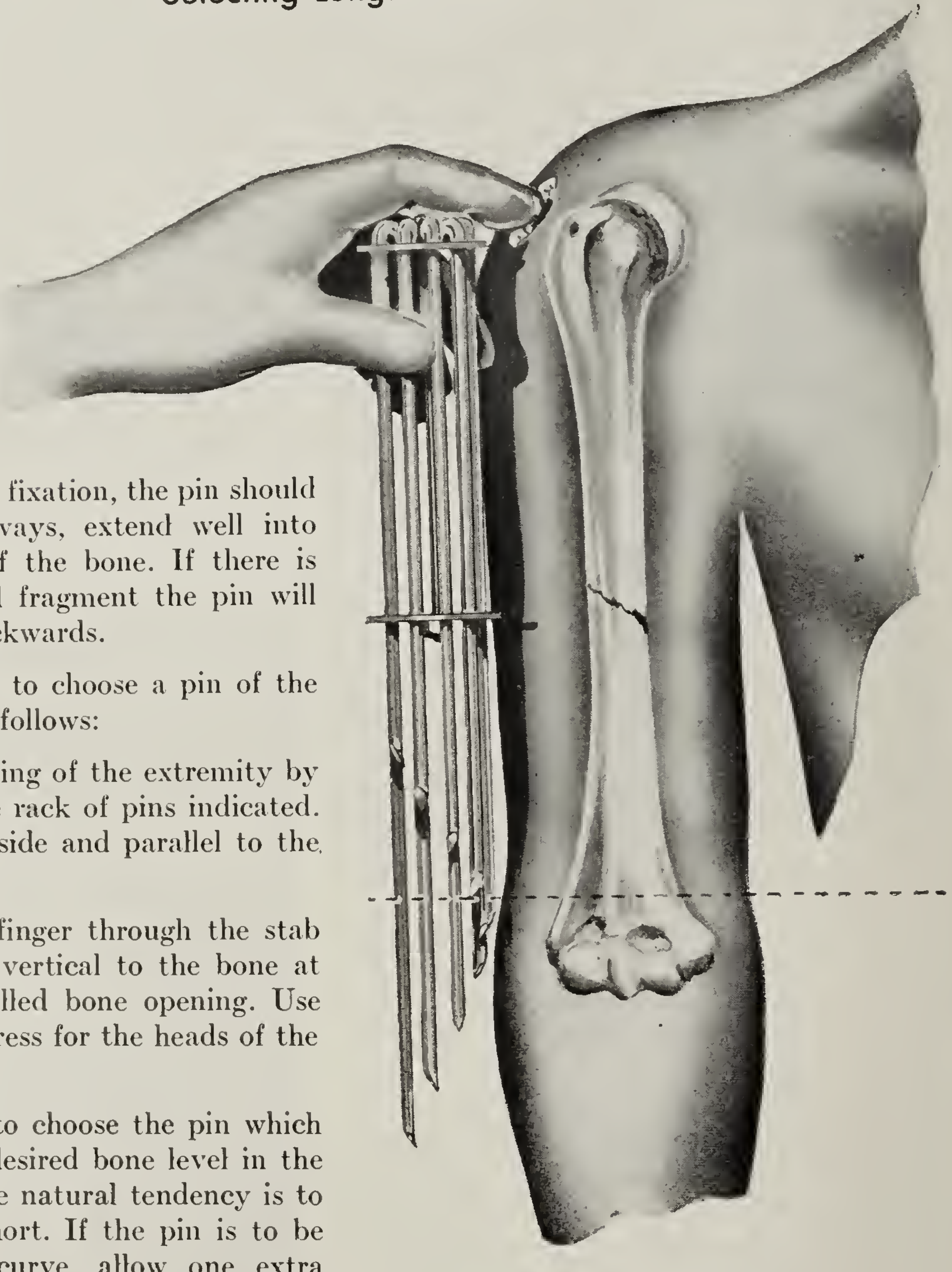
In children, however, it often becomes necessary to make the opening in the side of the shaft in order to avoid injuring the epiphysis.

In most bones the ideal point of entrance is through a bony prominence near the extremity of the bone, such as the tuberosity of the humerus or the great trochanter of the femur. With a little experience most of these prominences can be readily identified by the surgeon from palpation



A WRONG—May split cortex.
B RIGHT—Stable fixation upper fragment.
C WRONG—Poor fixation upper fragment.

Selecting Length of Pin



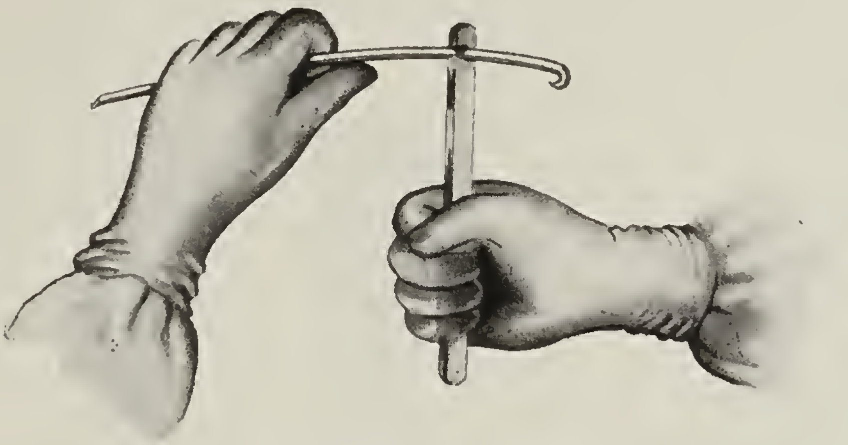
To secure the best fixation, the pin should usually but not always, extend well into the far extremity of the bone. If there is motion in the distal fragment the pin will tend to migrate backwards.

The simplest way to choose a pin of the proper length is as follows:

Overcome shortening of the extremity by traction. Choose the rack of pins indicated. Lay this rack alongside and parallel to the fractured extremity.

Insert the index finger through the stab wound and hold it vertical to the bone at the level of the drilled bone opening. Use this finger as a buttress for the heads of the pins.

Rotate the rack to choose the pin which will extend to the desired bone level in the distal fragment. The natural tendency is to choose a pin too short. If the pin is to be preshaped into a curve, allow one extra length for the curve.

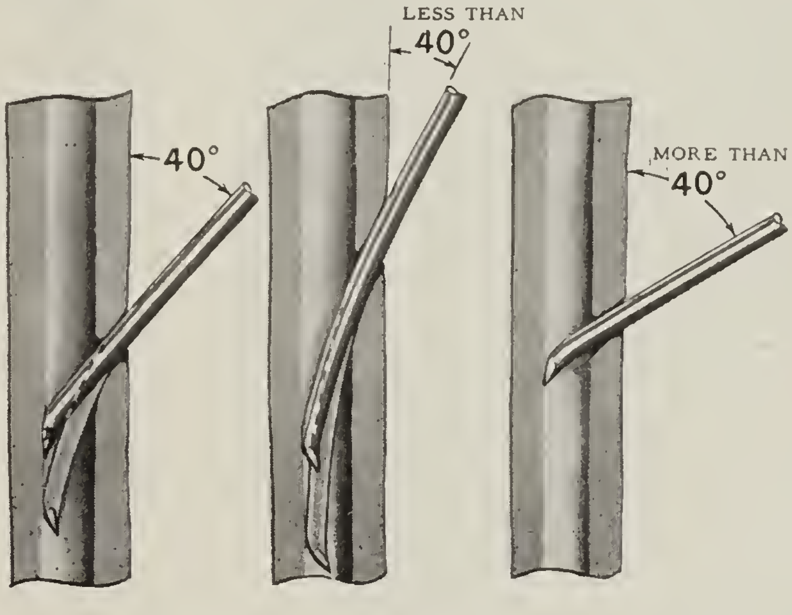


Preshaping the Pin

Curving pin with bending iron is done almost routinely in pinning the shafts of the femur and tibia. The convexity of the curve is always away from the point and hook of the head.

In the upper extremity the pin is rarely preshaped. A slight curve might be advantageous for the shaft of the humerus.

In fractures near joints the proximal portion of the pin is usually curved with the bending iron just before the pin is driven completely home. This is because a straight pin can be controlled better than a curved one and when only the proximal portion of the pin needs a curve to conform to the contour of the bone it is best to defer this procedure until the pin has been accurately placed.

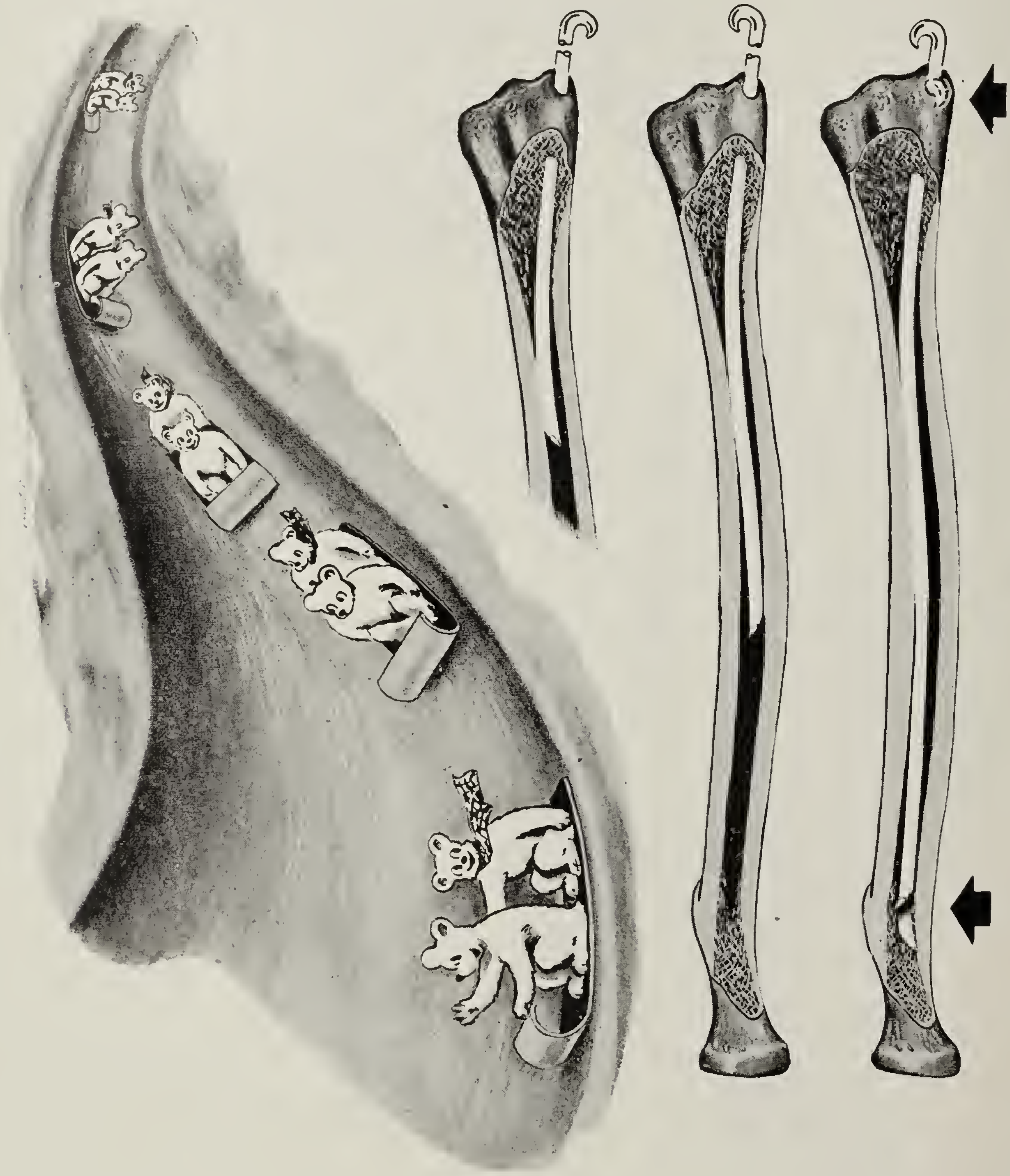


Angle of Insertion

Diagram showing importance of angle at which pin is inserted. The angle of axis of pin to axis of bone should be less than 40 degrees.

The more acute the angle the easier the pin will drive. The greater the angle the more three point pressure is built up inside the bone. This principle can be used advantageously to secure stable fixation of the proximal fragment. If carried to the extreme, however, the pin may penetrate the far cortex, can split the bone or fail to drive.

Bone will not split if the pin is introduced at the proper angle through the extremity of the bone. In the hard cortex of the shaft it is difficult to make a drill hole of sufficient obliquity. If a large rod is forced through an improper opening in the shaft splitting can occur. This is especially true in the aged and debilitated.



Driving the Pin

Keep in mind the toboggan sled. To guide properly it must be kept upright. It must be guided but left free to rotate partially on its axis to take the curves or glide over any elevations it might encounter.

The pin glides in the same manner. It will rotate on its axis to take curves or ride over obstructions. If traveling in the right direction, allow it freedom to guide itself.

Arrows indicate the head and point which have been set against the cortex of the bone to increase the stability of fixation.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

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MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College .... Poet

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

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EDITORIALS

EDUCATION FOUNDATION REPORT

In 1951 the American Medical Association organized the American Medical Education Foundation, designed to undergird with financial help our 79 medical schools in the United States. Their annual need is estimated to be ten million dollars. From the medical profession have come $1,652,471.46, the number of contributors increasing from 1,876 in 1951 to 7,259 in 1952, or 287 per cent. The same group of doctors increased their contributions more than 200 per cent from 1951 to 1952. Reports from 78 of the 79 medical schools revealed that 30,000 individual physicians contributed in excess of $2,258,534 to their medical schools in support of teaching budgets.

The foundation is well organized with a state chairman for each state. Dr. H. H. McClanahan, Jr., of Columbus is chairman for Mississippi. No better man could have been selected.

Contributions to the foundation indicate a growing concern among doctors for medical education. It indicates that the medical profession wants to help itself and establish an independence in keeping with the American way of life.

The American Medical Association is becoming more active in every phase of human life. *Today's Health* is the most valuable health magazine in the nation. It is doing a great work in the field of health education. Medical research is making marvelous advances. The practical application of medicine is not overlooked, along with better distribution of doctors as medical service aims of the American Medical Association. We are sure that Dr. George Lull is due much credit for the awakening in this attitude of the AMA.

RURAL HEALTH SURVEY

Dr. S. K. Johnson of Pelahatchie, chairman of the Committee on Rural Health for the Mississippi Medical Association, is promoting plans through Mississippi State College to make a survey of rural health. We congratulate Dr. Johnson on this undertaking. He is really interested in rural medicine, is a good thinker and does not mind work.

We acknowledge appreciation to State College for making the study. Ready to do work of practical value to all the state, the college is soliciting other organizations to help. It is a healthy sign that a rural state is making definite plans to solve its own problems. Mississippi is outstanding in public health service, is building one of the best hospital systems in the nation, and a four-year medical school which will be prepared in training first class general practitioners and public health officers. We can go a long way solving our own state medical and nursing problems as well as many others on our own state level in a large measure. We can not only help ourselves, but we can show the way to other states. We have shown the way in roads, education, industry, and in many other ways.

GULF COAST CLINICAL IN MOBILE

Dr. E. C. Parker of Gulfport sends us the program for the annual Gulf Coast Clinical meeting which will convene at the Admiral Semmes Hotel, Mobile, Ala., October 15 and 16.

You will agree that the program is an inviting one. Dr. Parker who has been fathering this meeting for a long while, is justly proud of its excellent offerings. He is not satisfied with anything but the best.

Mobile is a city of culture and refinement. The people are gracious, kind and generous. It will do you good to attend this program.

NEWS AND COMMENT

STATE COLLEGE UNDERTAKES STUDY

Mississippi State College announces the receipt of a grant for $27,500 from the Health Information Foundation to explore in detail the impact which a "saturation" health insurance program would have on an entire county. This project is part of an over-all $310,000 H I F research program to study voluntary health insurance plans in the United States.

The object of this part of the over-all program is to collect and evaluate data in connection with a county-wide experiment to extend the coverage and benefit provisions of such plans to all segments of the population not now covered. These include principally farmers and other self-employed people, retired persons, the indigent, and low income families. The ultimate goal of the study is to indicate to medical, hospital, insurance and health leaders and to state and local governmental agencies what it takes to make a voluntary health insurance program successful.

Scott County, a representative rural county in Mississippi, has been selected as the area of study. Among the factors to be explored in detail in Scott County are:

1. The development of existing private and public health facilities and programs, with specific attention to prepayment voluntary health insurance.
2. Public awareness and use of available health facilities and services.
3. Formal and informal methods of communicating information on such facilities and services.
4. The role of all forms of prepaid health insurance in the county and the effect of prepaid health insurance on health practices of county residents; and
5. The ability of voluntary health insurance to offer a "saturation" level prepaid voluntary health insurance program within the social and economic framework of the county.

In addition to furnishing a general picture of the health organization of Mississippi and of Scott County, it is expected that this study will provide some understanding of the intersection of Federal, state and local health programs within a county.

Director of the study is Marion T. Loftin, Department of Sociology and Rural Life, Mississippi State College with other participants from the college including Harold F. Kaufman, Head, Division of Sociology and Rural Life; Gordon F. Bryan, Department of History and Government, and Mrs. Annette S. Boutwell, Health Education Specialist in the Agricultural Extension Division.

Dr. Odin W. Anderson, H I F research director, will serve as consultant and adviser on matters pertaining to the administration of health programs and prepayment plans. Charles P. Murphy, of H I F's research staff and Lewis Jones, Director of Research of the Rural Life Council, Tuskegee Institute, will participate in the field surveys. Dr. Clyde W. Hart, director of the National Opinion Research Center, University of Chicago, will advise on the field sample and tabulation of research data.

A General Advisory Committee for the study includes representatives of the Mississippi State Medical Association, the Committee on Rural Health, the Mississippi Hospital and Medical Service, Mississippi State Hospital Association, the State Board of Health, and the State Welfare Department.

MEDICAL NEWS

Mississippi Medical News

Honorary and Fifty Year Club Physicians. Physicians granted Honorary and Fifty Year Club memberships by the House of Delegates have received their special membership cards as well as a letter of congratulations. These are:

HONORARY

W. G. Brock, M.D., West
Samuel W. Colquitt, M.D., Sunflower
John W. D. Dicks, M.D., Swarthmore, Pa.
(Homochitto Valley M. S.)
A. M. Gill, M.D., Sidon
C. A. Kirk, M.D., Louisville
T. B. Lewis, M.D., Greenville
S. L. Stephenson, M.D., Corinth
H. G. Williams, M.D., Prentiss

FIFTY YEAR CLUB

G. M. Barnes, M.D., Belzoni
W. W. McBryde, M.D., Ethel
George W. F. Rembert, M.D., Jackson
John M. Wright, M.D., Hernando
J. R. Hill, M.D., Corinth
B. Lampton Crawford, M.D., Tylertown
J. S. McIntosh, M.D., Jackson

State Association Committee Appointments. Dr. M. Q. Ewing, MSMA President, has notified more than seventy-five physicians of their appointments to serve during 1953-54 on committees of the association. Pending notices of acceptance, a listing will be published at an early date.

Chairmen of Scientific Sections. Announcement was made by the President of the association of the appointment and acceptance of the chairmen for the six scientific sections. The appointees are:

Eye, Ear, Nose, and Throat
L. S. Gamble, M.D., Greenville
Hygiene and Public Health
B. D. Blackwelder, M.D., Hattiesburg
Medicine
H. H. McClanahan, Jr., M.D., Columbus
Obstetrics and Gynecology
R. A. Street, Jr., M.D., Vicksburg
Pediatrics
Charles R. Gillespie, M.D., Laurel
Surgery
Stanley A. Hill, M.D., Corinth

State Association Membership. Dr. George E. Twente, Jackson, secretary of the association announced on July 15 that the membership totaled 1,100 which included exempt members prior to the eighty-fifth annual meeting.

National Medical News

A new and revised, although familiar, "Doctor-Draft Act" was signed by President Eisenhower on June 29, scarcely twenty-four hours before the expiration of the old law. The new act, now officially Public Law 84, 83rd Congress, became effective July 1 for a two-year period.

Concurrently, the American Medical Association reminded its membership that it will oppose any further extension of this law after the June 30, 1955, expiration date.

Most significant aspect of the new law is that it creates little or no change in over-all procedures and there is almost no chance of Priority IV physicians being called during the life of the law except in grave emergencies or general, all-out war.

All physicians, dentists, and veterinarians who are not members of a reserve component of the Armed Forces must register if they are under 50 years of age. Induction can take place up to 51 years of age. Newly graduated physicians must register within ten days of graduation and file deferment requests to complete internships.

Under PL 84, twenty-four months of service are required for physicians having less than nine months prior active duty. Shorter periods are required if prior service has been greater. Twenty-one months are required if prior service ranges between 9 and 12 months; eighteen months for 12 to 15 months prior service; and fifteen months for more than 15 months prior service. Priority II doctors now on active duty who had seventeen or more months service before their most recent induction are now classified Priority IV and may request immediate release on this basis.

While the four priorities are continued under the law, it lowers from 21 to 17 months the amount of active duty required to move a physician from Priority II to Priority IV. All previous active duty of any nature is credited except for Priorities I and II with less than ninety days service and Priority III with no service under the old law. The creditable service must have been since September 16, 1940.

The $100-a-month special equalization pay was continued and deferments for essential reasons remain substantially the same.

GULF COAST CLINICAL SOCIETY

The two-day session of the Gulf Coast Clinical Society promises the following excellent roster of guest essayists for the annual October 15 and 16 meeting:

DR. CARL A. BINGER, Editor in Chief of *Psychosomatic Medicine*, associate clinical professor of psychiatry, Cornell Uuiversity, certified by the American Board of Psychiatry and Neurology, and also by the American Board of Internal Medicine. Probable subject, "Psychotherapy of Everyday Practice."

DR. EDGER A. HINES, Professor of Medicine, Mayo Foundation, co-author with Allen and Barker of the book, *Peripheral Vascular Diseases.* Subject of talk, "Some Medical Aspects of Peripheral Vascular Diseases".

DR. ROBERT LICH, JR., Professor of Urology, University of Louisville. Subject, "Chronic Pyelonephritis".

DR. JOSEPH H. FARROW, Surgeon, Memorial

Hospital, New York City, probable subject, "Differential Diagnosis of Lumps in the Breast".

DR. HENRY T. BAHNSON, Dr. Blalock's associate at Johns Hopkins. Probable subject, "Aortic Surgery" with special reference to surgery of aneurysms, and aortic transplants.

DR. ARMAND J. QUICK, Professor of Biochemistry, Marquette University, author of *The Physiology and Pathology of Hemostasis*, published 1951. Subject of address, "The Hemorrhagic Diseases".

Clinical Pathological Conference: Case to be discussed by Dr. Tinsley R. Harrison, Professor of medicine, Medical College of Alabama and Dr. Champ Lyons, professor of Surgery, Medical College of Alabama.

FROM DR. DICKS

To the members of the Mississippi State
Medical Association—

Dear Friends:

I wish to take this opportunity to thank you for the honors that have come to me throughout the years of my life in the medical protession. The happiest days of my life were those spent with all of you during my membership of the Mississippi State Medical Association. And the greatest lament of my life has been, on account of my ill health and advanced age, I have been deprived of the joys of meeting with you every year and renewing those happy associations which I have treasured so much through the years.

As I recount the times you have honored me—first when membership was bestowed upon me in the spring of 1899, later when you made me a member of the Council, and finally elevated me to president-elect and then president — I bow in humble gratitude. But when you exalted me to honorary membership in the Association and a life membership in the Fifty-Year Club at the last annual meeting, I considered these last bestowals the highest. My sincere prayer is that I shall have merited your confidence and approbation.

Thanking you with all my heart and trusting that it shall sometime again be my happy privilege to gather with you at a state meeting, I wish for all of you life's choicest blessings throughout all the years ahead.

Your obedient servant and friend,
John W. D. Dicks, M.D.
314 Lafayette Avenue
Swarthmore, Pa.

TRAUMA COURSE ATTENDED

The Department of Surgery of the University of Tennessee gave an intensive three-day postgraduate course on trauma on July 15, 16, and 17. This course was attended by practicing physicians from five states and was under the direction of Dr. Harwell Wilson, professor and chief of the division of surgery. The diagnosis and management of injuries to the vascular system, abdomen, chest, head, and skeletal system were presented. A symposium was also held dealing with the treatment of burns. In addition to the formal presentations ward rounds were held daily in the John Gaston Hospital, and a round table question-and-answer period was held daily at the luncheon hour.

The University anticipates offering other courses in the future designed to offer the busy practitioner an opportunity for postgraduate study without having to take too much time from practice. Information may be obtained from the Postgraduate Department, The University of Tennessee, Memphis, Tenn.

PUBLIC RELATIONS TIP FOR AUGUST

Psychologically, there's a jagged break in the ideal doctor-patient relationship when a patient with a minor ailment is dispatched with a prescription after one visit to the doctor. "How can the doctor tell whether the medicine helped me or not?" wonders the patient. *Many doctors solve this problem by handing such patients self-addressed postcards and asking them to report on their condition in a day or two.* It's a friendly "let me hear from you" gesture.

ACCP POSTGRADUATE COURSE

The Eighth Annual Postgraduate Course on Diseases of the Chest will be held at the Hotel Knickerbocker, Chicago, Illinois, September 28-October 22, 1953, and the Sixth Annual Postgraduate Course on Dieases of the Chest to be held at the Hotel New Yorker, New York City, November 2-6, 1953.

These annual postgraduate courses endeavor to bring physicians up to date on recent advancements and treatment of heart and lung disease. Tuition for each course is $75.

Further information may be secured by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

NEW DRUGS NEW DEVICES NEW DIGESTS

What It Is: Prophyllin, a "marked advance in wet dressing therapy" for a great many dermatologic conditions eliminates the odor problem associated with sodium propionate. Prophyllin combines water-soluble chlorophyllin and sodium propionate.

What It's For: Acute contact dermatitis, atopic eczema and neurodermatitis, seborrheic eczema, antibiotic reactions, varicose eczema and moderate secondary infections, clinically as a wet dressing, mouth wash and douche in some cases, foot bath in the treatment of dermatophytosis, dermatitis of the face.

Who Makes It: Rystan Company, Inc.

What Is It: Adrenosem is a synthetic chemical and the full chemical name is adrenochrome mono semicarbazone sodium salicylate complex.

What It's For: Adrenosem is specific for conditions characterized by increased capillary fragility and permeability and some indications are: idiopathic purpura, retinal hemorrhage, familial telangiectasia, surgery, epistaxis, hemoptysis.

Dosage: In mild, low-grade bleeding, the dosage recommendation is 1 ampul (5 mg.) intramuscularly. every 3 or 4 hours till bleeding is controlled, then 1 tablet (1 mg.) orally 4 or 5 times daily till bleeding stops.

For active bleeding, 1 ampul (5 mg.) intramuscularly, every 2 hours until controlled. The frequency of dose is then diminished.

At the recommended dosage level, there are no contraindications to adrenosem. No evidence of toxicity was found in laboratory animals, and human subjects treated with daily doses for as long as 18 months showed no toxic effects attributable to the drug.

Who Makes It: S. E. Massengill Company.

A new full-pint economy size bottle of Sucaryl Sweetening Solution, the heat-stable non-caloric sweetener for diabetics and weight-reducers, has been added to Abbott Laboratories' line.

ABSTRACT FROM PEDIATRIC LITERATURE

HARVEY F. GARRISON, M.D.

Treatment of Pneumococcal Meningitis with Large Doses of Penicillin. A Series of Twenty Consecutive Cases. Paul A. Bunn and George Peabody, Syracuse, N. Y. Arch. Int. Med. 89:736-42, May 1952.

Twenty patients of all ages with bacteriologically proved pneumococcic meningitis were treated with large doses of parenterally administered penicillin. There were 15 survivors. Of those who died, 3 were within the first 24 hours of hospitalization. The other 2 were elderly individuals who succumbed from complications after the meningitis had healed.

Pneumococci were recovered from spinal fluid or blood or both in every patient. The penicillin dosage which proved satisfactory was 1,000,000 units every two hours parenterally for at least one week, or until clinical remission seemed secure. With some infants the individual doses were reduced to 500,000 units.

Several patients were given single intrathecal doses of 6,000 and 10,000 units early in the treatment period. It was felt that such use of intrathecally administered penicillin is not desirable (poor penetration to all areas of infection and its irritative qualities), probably even in comatose patients. Adjuvant therapy with sulfonamides or aureomycin apparently adds nothing to efficacy of the regimen.

In the majority of those patients examined, lumbar punctures on the seventh or eighth day of treatment revealed spinal fluid cell counts below 10. Spinal fluid was sterilized of pneumococci within 24 hours in 16 of the 17 patients who survived more than one day, and within 48 hours in the other. During the period of acute meningitis, spinal fluid concentrations of 0.05 to 0.5 unit per cubic centimeter were obtained with 1,000,000 units penicillin given intramuscularly. Blood concentrations reached peak levels of 5 to 20 units with the same dosage.

COMMENT:

This is indeed a very interesting report and the treatment suggested in the article should be given serious consideration by the medical profession throughout the country.

Harvey F. Garrison, M.D.

ELECTROCARDIOGRAPHER, certified, desires to interpret electrocardiograms. Replies by return mail same day. $1.50 per interpretation. Write Box No. 2, *The Mississippi Doctor*, Booneville, Miss. 3t

VAN METER PRIZE AWARD

The American Goiter Association again offers the Van Meter Prize Award of three hundred dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held in Boston, Massachusetts, April 29, 30 and May 1, 1954, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English, and a typewritten double-spaced copy in duplicate sent to the corresponding secretary, Dr. John C. McClintock, 149½ Washington Avenue, Albany 10, New York, not later than January 15, 1954.

The U. S. has the highest maternity recovery rate in the history of the world, which is due in large part to the increase of hospital births. During 1951 there was less than 1 death per 1400 births, an all-time low in medical history.

A new patient is admitted to some U. S. hospital every 1.8 seconds!

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MERIDIAN, MISSISSIPPI

DEATHS

DR. F. MICHAEL SMITH

Dr. F. Michael Smith, who retired last February after 25 yeares as director of the Warren County Health Department , died July 22 after a long illness. He was 74.

Services were held at Crawford Street Methodist Church at 10 Thursday morning with the Rev. Seth Granberry officiating, assisted by the Rev. T. O. Prewitt, district superintendent. Burial was at Kilmichael.

Formerly of Kilmichael, and a graduate of the University of Tennessee School of Medicine, Dr. Smith had been in public health work for nearly half a century.

Dr. Smith had served in Montgomery and Clay counties in Mississippi and in Louisiana and Arkansas before coming to Vicksburg in 1927, when he became director of the Warren County Health Department. He was always active in his local and state medical societies, having served as president of his district society during two different residencies. In 1939 he was president of the Mississippi Public Health Association.

He leaves his wife, Mrs. Mattie Basinger Smith; two daughters, Miss Cassie B. Smith of Jackson and Mrs. George Miller of New Orleans; a son, Dr. F. M. Smith, Jr. of Thibodaux, La., and a sister, Mrs. John Burdett of Jackson.

DR. J. H. GREEN

Dr. J. H. Green, prominent Lee County physician for 53 years, died at North Mississippi Community Hospital July 22. He had been in ill health for several years. He was 82.

Dr. Green, who was active in civic, business and religious work, was born at Rara Avis, Miss. He was the son of Mr. and Mrs. Franklin Green.

Dr. Green was educated in schools at Rara Avis and received his bachelor of science degree at Oakland Normal College in 1894 and his medical degree from the University of Louisville Medical School in 1900. He served his internship at Norton Infirmary in Louisville, Ky.

He did post-graduate work at New York Polyclinic Hospital, Cook County Hospital and was trained in surgery by Dr. A. J. Ochsner at Augustana Hospital in Chicago. He also did post-graduate work at Tulane in New Orleans.

He began the practice of medicine in Guntown in 1900. In 1913 he moved to Tupelo and helped organize the old Tupelo Hospital of which he was chairman of the medical and surgical staff. In 1938 he organized and was the chairman of the North Mississippi Community Hospital which he was a member until his death.

Dr. Green held membership in medical societies and was senior fellow of the American Medical Association.

He was honored many times by his fellow doctors and in 1950 was awarded a 50--year certificate in appreciation of his more than 50 years in the medical profession.

He was a member of the board of stewards of First Methodist Church for many years and a member of the board of directors of the Peoples Bank and Trust Co. He was in Who's Who Among Physicians and Surgeons in 1938. He was serving as colonel of Gov. Hugh White's staff at the time of his death.

He was married to the former Miss Cora Lee Hinds in 1903.

He leaves one son, Dr. James C. Green of Tupelo, and one grandson, James C. Green, Jr.

DR. ALFORD JAMISON

Dr. Alford Jamison, retired physician and farmer, died suddenly July 11 at his home. Services held Sunday alternoon at 2 at the Kimbro Funeral Chapel, with Dr. Ira B. Eavenson, Baptist pastor, officiating.

Dr. Jamison was born in Marks June 26, 1880, son of the late W. T. and Cornelia Adelaide Jamison. He lived his entire life in Marks.

He graduated from Christian Brothers College in Memphis, the University of Mississippi, and the Memphis Hospital Medical College. He interned at the Charity Hospital in New Orleans for two years and did post-graduate work at Tulane University in 1918.

In 1932 he was elected to the board of supervisors of Quitman County and served 16 years.

Dr. Jamison leaves his wife, Mrs. Birdie Abernathy Jamison; four daughters and three sons, Mrs. Ed Stovall and Mrs. James Brunt of Marks, Mrs. Ben Melton of Tallahassee, Fla., Mrs. C. L. Partridge of Schlater, Miss., John C. Jamison, Charles Jamison and Bert A. Jamison of Marks.

He leaves two sisters and a brother, Mrs. Lena Hays, Miss Alice Jamison and Mike Jamison, all of Marks.

DR. JUNIUS M. TOWNSEND

Funeral services for Dr. Junius Massey Townsend, age 75, who died in an automoblie accident at Morton July 13., held at the Morton Baptist church.

Dr. Townsend, who had been a practicing physician for 41 years, died at the wheel of his automobile on Morton's main street, driving north, he apparently lost control of the vehicle and crashed into the rear of a car owned by Cecil Rogers, which was parked in front of Roger's law office.

At the Scott county hospital, examination revealed Dr. Townsend may have suffered a heart attack, although injuries from the crash were sufficient to have been fatal.

Dr. Townsend had been practicing medicine for 50 years. He was a member of the Central Medical Society, and of the Morton Baptist church, the Morton Lions club and the Morton Masonic lodge. He was also a Shriner.

He leaves two daughters, Mrs. Kenneth Baker, Clinton S. C., Mrs. Harold Schug of Utica. N. Y., one son, Dr. George Townsend of Forest; four sisters, Mrs. Taylor Beasley, Mrs. H. E. Gardner, and Miss Addie Townsend, all of Harperville, Miss., Mrs. O. C, Rigby of Shreveport, La.; three brothers, O. W. Townsend of Harperville, Dr. A. D. Townsend and Lonnie Townsend of Birmingham, Ala. and seven grandchildren.

DR. ROBERT S. ROBY

Dr. Robert S. Roby, 64, died at his home, 579 Road of Remembrance in Jackson, June 19.

He was a native of Attala county and formerly lived in the Delta at Bourbon for 31 years where he was a practicing physician. He had lievd in Jackson for the last three years.

Dr. Roby attended Mississippi College and Memphis State Medical College. He was a graduate of Tulane University. He was a member of the Baptist church, the Mississippi Medical Society and the Central Mississippi Medical Society.

His survivors include his wife, one daughter, Mrs. Roe Fly, Jr., of Jackson, two sons, Jerry W. Roby of Jackson, and Robert Stacy of Monroe, La., one brother, John D. Roby of Greenville, and one sister, Mrs. Lucius Jordan of Kosciusko.

DR. HENRY FRED MARS

Funeral services were held in Meridian June 24 for Dr. H. F. Mars, who died in a Natchez hospital. He was 69 years old.

Dr. Mars had been a resident of Natchez for the past year. He came here from Meridian where he was connected for several years with the East Mississippi State Hospital.

A graduate of Memphis Hospital Medical College, Memphis, Tenn., Dr. Mars was licensed to practice in Mississippi in 1911.

Surviving are two daughters, Mrs E. W. Ellis, Tampa, Fla., also a sister, Mrs. R. L. Barbour, Meridian.

DR. N. W. COWART

Funeral services for Dr. Newit W. Cowart, 74, were held May 20 in Jackson from Dees Funeral Home.

Dr. Cowart passed away at his home in Wiggins after being ill for several months. He was improving from his illness but passed away suddenly.

He was born in Silver Creek, December 24, 1878. He was a practicing physician for a number of years here and had previously practiced at Howison where he was connected with the Dantzler Lumber Company.

Dr. Cowart received his medical education at Memphis Medical College, Memphis, Tenn., graduating in 1908.

He is survived by his wife, Mrs. Eula Morrison Cowart; two sons, B. Cowart, Starkville, Norman W. Cowart, Wiggins; three daughters, Mrs. Oba Ladnier, Perkinston, Mrs. C. B. Clark, Philadelphia, and Mrs. J. T. Stone, Pittsburgh, Pa.; six grandchildren; four sisters, Mrs. Rose Stripling, Port Arthur, Texas, Mrs. Hattie Carter, and Mrs. Bennie Cloney of Richmond, Va., and Mrs. Maud Hatten, Gulfport.

DR. JOHN C. WALLACE

Dr. John Cheatham Wallace, 78, an Arlington physician for 20 years, died at his home in Arlington, Va., June 30.

He practiced at Osyka, Miss., before going to Arlington. Born in Bentonia, Miss., he obtained his medical degree at Tulane University, New Orleans.

DR. T. P. SPARKS

Dr. Thomas Plewman Sparks, former resident of Vicksburg died suddenly July 12 in New Iberia, La., where he has lived for a number of years. He was 56.

A native of Jackson, Dr. Sparks was on the staff of the Lutheran Hospital for approximately five years before moving to Louisiana.

He attended school at the University of Mississippi and obtained his medical degree at Tulane University in 1921. After practicing medicine for several years in Jackson, he joined the staff of the local hospital, subsequently moving to New Iberia, where he continued his medical practice.

During World War II he was a major in the Army Medical Corps and spent three years in the European theatre. He leaves his wife, Mrs. Gladys Clement Sparks, formerly of Lake Providence, La., three children, Gladys, Tommy and Johnny Sparks, all of New Iberia; three sisters, Mrs. Willard H. Parsons and Mrs. Robert Ford of Vicksburg; and Mrs. Abbott Ferris of Montgomery, Ala. a brother, J. W. Sparks of Gladewater, Tex., and several nieces and nephews.

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PRESIDENT'S MESSAGE

As we begin this thirty-first year of our existence, let us resolve to support more diligently the aims and ideals of our Auxiliary.

Let us ask ourselves if we appreciate to what body we are an auxiliary. Let our answer be that we share a precious partnership dedicated to the nobility of service, which we would interpret with loyalty and pride. Let us give to our physicians that highest praise which they so richly deserve, and let us uphold forever the honor of the profession whose prime object is "to bring cheer into the sickroom and often, though not so often as desired, bring healing".

Let us create a spirit of love, friendliness, good will and willing cooperation by working together for the understanding of all people. The responsibility of molding the right attitude in our community rests on you and me.

To paraphrase from a quotation from Dr. Miriam Van Waters, "Women are valuable just in proportion as they are able and willing to work in harmony with others".

Mrs. S. Lamar Bailey

§

"A Physician and a Man"

Some people are born to low estate,
While others are born to high.
They wend their devious ways alone,
Not knowing the reason why.
Now a MAN has passed along life's road,
The end of one transition.
He served his God and fellow man
And well fulfilled his mission.
Like Christ, he came to earth to heal
The body and the mind,
For to the rich and poor alike
He was forever kind.
Material gain was not his creed;
He sought alone to give
The talents with which he endowed,
So that others could better live.
He followed the Hippocratic oath,
Like so many of his clan.
He gave his all, returned to God,
"A PHYSICIAN and a MAN."

The Present Status of the More Commonly Employed Immunization Procedures*

R. CANNON ELEY, M.D.[†]
Boston, Massachusetts

BEFORE EMBARKING upon immunization procedures it is necessary to possess not only an accurate knowledge of the specific measures involved, but also a thorough appreciation of such important factors as: 1) the age distribution of the infection; 2) the proper age for immunization; 3) the possible dangers of the procedure employed, such as local, systemic reaction or other complications; and 4) the expected duration of the induced protection. These factors will be considered with each of the diseases discussed.

Protective or immunization procedures may be instituted for two purposes: 1) complete protection, as in diphtheria, smallpox, tetanus, pertussis and other diseases; or 2) for partial protection with modification in the clinical course of the disease, as in the case of healthy, non-immune individuals known to have been exposed to measles.

Now several factors are concerned when an individual becomes exposed to a communicable or contagious disease for certainly exposure is not necessarily followed by infection. 1) The susceptibility of the individual must be considered, as well as the 2) virulency of the infecting agent, and 3) the "dose" or amount of the infecting agent introduced. It is well known that a newborn infant of an immune mother has a natural protection against certain diseases, such as measles, diphtheria, polio, scarlet fever and to a certain extent against pertussis and therefore exposure is not necessarily followed by infection. The agent may be one that readily passes from one host to another to produce the disease as can be readily recognized in the difficulty encountered in attempting to prevent or control the spread of chickenpox at home or in the hospital. It might be argued that this depends upon the *degree of susceptibility* rather than the *ease of transmission* or dissemination. The amount of the inoculum or "dose" cannot be disregarded, for it is well known that a certain degree of exposure with resulting mild or subclinical infection may actually serve the purpose of stimulating protection against infection, such as is seen in diphtheria, while massive infection may precipitate a severe or even fulminating disease. We are all aware of the fact that certain contra-indications to basic immunizations exist but it might be well to mention them just to refresh our memories: 1. Antigens should not be given in the presence of any type of infection, respiratory or otherwise. 2. Antigens should not be given to children known to have had "febrile convulsions". 3. They should be given with utmost care to children with cerebral palsy or other known central nervous system disturbances. 4. They should not be given to premature infants and in those instances of known allergy great care should be exercised lest untoward reactions of a serious nature develop. And finally, if any allergic manifestations should appear following the second injection of any of the preparations, the third injection should be omitted. These remarks in general cover most of the "don'ts", and one of the "do's" should come in here —be sure to give all injections deeply subcutaneously, preferably intramuscularly and deliver about 0.1 cc. of air at the end of the injection as this will clear the needle and leave none of the antigen and its vehicle along the needle track—the most common cause of "sterile abscess."

SMALLPOX

A discussion of the effectiveness of the measure or of the technique of the procedure is obviously not indicated. However, certain aspects might deserve mention and one of these is the contraindications for smallpox vaccination. Vaccinations should not be performed on 1) premature infants, 2) debilitated individuals, or in the presence of existing infections, particularly those of the skin. 4) Children with eczema should never be vaccinated, and what is equally important should not be allowed to come in contact with recently vaccinated individuals, as generalized vaccinia may result. Furthermore, vaccinations should never be performed during the incubation period of any of the contagious diseases that present dermatological manifestations, such as chickenpox, measles, etc., for here again the danger of vaccinia is great.

[†]From the Department of Pediatrics, Harvard Medical School and the Department of Medicine, Children's Medical Center, Boston, Massachusetts.

Primary vaccination should be performed during the first or second year of life as it has been conclusively shown that the danger of *post-vaccinal encephalitis*, which occurred in such alarming proportions in Germany, Holland, and Switzerland during 1922-1923, can be minimized. There is also good experimental evidence to indicate that post-vaccinal encephalitis occurs much less frequently in mice that have previously been immunized to diphtheria. Since early immunization against diphtheria is the common practice in this country, it may be one of the factors accounting for its low incidence. This low incidence of complications is well shown by the report of Muckenfuss[1] relative to the city-wide vaccination program that was performed in New York City in 1947. There were 6,000,000 vaccinations and of this number, there were 36 cases of vaccinia, 22 of which occurred among children who acquired it by contact from other members of the family. Of this number there were two deaths. There were 45 cases of encephalitis in which the diagnosis was reasonably correct, an incidence of one per 150,000 vaccinations. There were eight deaths, four of which were due to other causes, and in the remaining four definite laboratory evidence has not been produced to demonstrate that these deaths were due to vaccination.[2]

DIPHTHERIA IMMUNIZATION

Clinical experience has so established the effectiveness of diphtheria immunization that it is now a recognized procedure in the practice of medicine. The eradication of the disease in those localities where immunization is routine, the demonstration of apparently clinical immunity by the Schick test, and the demonstrations of the presence of protective quantities of antitoxin in the blood serum leave no doubt as to the effectiveness of this prophylactic procedure.

Age of Immunization. It has been taught that the best time for the immunization of infants is after the first six months of life. This view has been based on the thought that the existing passive protection inherited from the mother (provided the mother was immune at the time of pregnancy) interferes with the antigenic response to the toxoid, and also that antigenic response before this age is not sufficient to impart lasting protection. Recent evidence[3],[4],[5],[6] would indicate that effective antibody response can be elicited in infants at a much younger age period. As a result it has been stated that immunization should be instituted at an earlier date, i.e., from the fourth to the eighth week of life. Although studies do show that newborn infants respond to an antigenic stimulus, this response occurs in a greater percentage of patients, reaches a higher titer and persists for a longer period of time if immunization is not instituted until time between the fourth and eighth week of life. The careful and painstaking work of Cook[3], Christie[5], et al., has shown that while passive immunity in the newborn infant does exert some "blocking" effect on the establishment of adequate antibody response to basic immunization procedures against diphtheria and pertussis, yet it is not of sufficient practical importance to discourage its use. Such "blocking" effect is not encountered with tetanus immunization as there is no transmitted protection; however, either group of infants gives a satisfactory response to a booster injection six to eight months after the basic immunization has been completed. Certainly no age limit should exist in times of endemic or epidemic appearance of the disease.

The Choice of Immunizing Agent: The antigenic superiority of toxoid over toxin-antitoxin has been thoroughly established and there is no reason why the latter should be employed.[7] Another good reason to discard the earlier agent is the inherent danger of anaphylaxis or serum sickness due to the small but definite content of horse serum, plus the fact that one is administering a toxic agent in the form of the toxin fraction. Several toxoids are commercially available and with each one now offered for clinical use, there has been an improvement both in quality of the agent and its antigenic powers. The fluid toxoid first offered by Ramon is an effective agent, but it has been superseded by alum-precipitated toxoid, as the latter is a more effective stimulant for antibody production and is more effective in two doses than was three doses of diphtheria fluid-toxoid. Aluminum-hydroxide absorbed toxoid is another excellent agent and is thought to be less painful to the patient and probably less frequently followed by "sterile" abscess formation. Protamine-precipitated toxoid has recently been offered as another immunizing agent and reports indicate that it produces usually high antitoxin titre.[8] At the present time alum-precipitated toxoid, or alum-hydroxide-absorbed toxoid appear to be the preparations of choice.

Combinations of diphtheria toxoid with other antigens, such as tetanus toxoid and pertussis vaccine are available and when employed do not appear to affect the individual's diphtheria antitoxin production. In fact, such combinations tend to increase the response and for this reason are considered the agents of choice[9,10,11].

Methods of Immunization: If the physician has selected fluid toxoid as the preparation of choice, he should administer the injection subcutaneously at intervals of one month in order to obtain the maximum antigenic response. Dosage has been established at 0.5 cc., 1.00 cc. and 1.00 cc. This amount of antigen may produce local and general reactions in older children. When a combined or mixed alum-precipitated toxoid is employed, the number of injections may be only two, although it is preferable to give three not less than three weeks and preferably one to two months apart. Under epidemic conditions the interval may of necessity be shortened, and some observers are of the opinion that even one injection may be adequate or at least impart some protection under such circumstances. However, under normal conditions one injection should never be considered as sufficient to render protection.

When older children are being immunized, it is advisable to reduce the dosage in order to avoid unpleasant reactions. The injection of 0.1 cc., 0.2 cc., and 0.5 cc. subcutaneously at intervals of two to three months has been established as the procedure of choice. In the adolescent and adult groups, immunization with toxoid may produce unpleasant or even severe local or systemic reactions and for this reason such measures should be carried out with caution. The immunization of these two groups is important, however, as clearly shown by the marked increase in the incidence of the disease in these age periods. Until the toxoid can be so purified that the percentage of reactions has become negligible, it would appear advisable to immunize only those adults who are shown to be Schick positive. If, however, the situation is such that immunization is essential, a Moloney test (0.1 cc. of 1:20 or 1:100 dilution of fluid toxoid intradermally) should first be performed, and if positive, caution should be exercised in performing the immunization, using diluted or small doses of toxoid, the initial injection being 0.1 cc. subcutaneously. It should not be forgotten that individuals with marked reactions to such minute amounts can be immunized by repeated Schick tests at intervals of four to eight weeks.

Immunological studies and clinical observations have shown that protection levels of antitoxin are present two to four months after completion of basic immunizations. The duration of immunity[12,13,14,15] depends upon the incidence of the infection in the locality. In areas where diphtheria is present subclinical or inapparent infections occur and hence serve as "booster" or recall injections, thus maintaining the antitoxin content at a protection level (.03 unit per cc. serum). Where there is no infection from 15 to 25 per cent of Schick-negative individuals will show a reversal to Schick positive at the end of 13 to 15 months. For this reason a booster injection should be given when this interval has elapsed since the basic immunization, the dosage being 0.1 cc. intradermally or ½ cc subcutaneously. Subsequent "recall" injections should be given at two- or three-year intervals.

TETANUS

Immunization against tetanus presents a somewhat different situation from that of diphtheria as there is no natural immunity to the infection nor does exposure to the spores have the antigenic stimulating effect (recall booster phenomena) as is obtained by exposure to virulent diphtheria organisms. Therefore in this immunization procedure it is of importance to maintain at all times an antitoxin level in the blood serum which is adequate to protect against infection arising from trivial abrasions and wounds that frequently go unobserved by patient, parent, or physician and can not be found in the patient suffering from the disease.

The *age for immunization* is practically the same as that for diphtheria.[3,4,5,16] In fact, the general tendency is to employ a toxoid containing these two antigens, thereby stimulating protection against the two diseases at one time. Older children and adults may have unpleasant reactions to the usual dose and for this reason it is perhaps advisable to reduce the amount when treating this age group.

Several agents are available for the purpose of tetanus immunization. However sufficient evidence is now available to indicate that alum-precipitated toxoid produces a more lasting immunity than does the fluid toxoid. It is of interest to note that during the last war the U. S. Army employed fluid toxoid, whereas the Navy employed alum-precipitated toxoid and both obtained the same protective results. Alum-hydroxide-absorbed tetanus toxoid is thought by some to produce less local reaction and a high, well-maintained antitoxin level. For these reasons it may well become the agent of choice.

When alum-precipitated tetanus toxoids alone are employed, the dosage should be .5 cc. (varies with product) given subcutaneously (deep) or intramuscularly for two injections, the interval between injections varying from one to two months, preferably the latter. Some observers are of the opinion that three injections are preferable, giving 0.5 cc. the first time and then 1.0 cc. at each of the two subsequent injections. When fluid toxoid is given, three doses of 1 cc. each are injected at three- to four-week intervals. Antigenic response is noted as early as two weeks after completion. When the triple alum toxoid is used, i.e., tetanus and diphtheria toxoids, and a pertussis vaccine three injections of 0.5 cc. each are given and at the present time this is the procedure of choice.

That the procedure is an effective one is well demonstrated by the low incidence of the disease during World War II. Long[17] reported that there were only 12 cases of tetanus among 500,000 wounded army personnel. Three were from cases who had received their full basic immunization, as well as their booster doses; six occurred in individuals with no active immunization, and three failed to receive their booster at the time of injury. Protective levels are established two to four weeks after completion of basic immunization. Exact duration of protection (0.1 cc. of antitoxin per cc. serum) has not been definitely determined, although published data show protective levels present up to three years. Therefore booster injections should be given at that interval.

Response to the "booster" or recall dose has been shown to be effective in individuals as late as five and one-half years following their primary immunization. Banton and Miller[18], McBryde and Poston[10] and Miller[20] have all shown conclusively that by the sixth or seventh day following injection, the antitoxin content of the serum has risen to levels far above those considered protective. Furthermore, this high new level is maintained. When "recall" injections are required, the more rapid absorption of fluid toxoid is the agent of choice. The dose of this injection is usually 0.5 cc. although it has been clearly shown that 0.1 cc. given *intradermally* or subcutaneously is as effective as 1 or 0.5 cc. given subcutaneously.

PERTUSSIS

A few years ago vaccination against pertussis was not considered as an effective immunization procedure. However, with a better understanding of the antigenic properties of the organism, i.e., Pase IH. Pertussis, and the subsequent development of a real antigenic vaccine, this procedure has now become a routine one in the protection of infants and children against the infection. Like other measures of this type it is not 100 per cent effective, but sufficiently so to warrant its universal use. A large total dosage of 40-60 billion cells is required and although complications of both a mild and a severe nature have been reported, yet if one considers the high morbidity and mortality rate of pertussis in the infant's early life 50 per cent of the deaths occur under seven months of life and 84 per cent occur during the first two years of life, objections to immunization appear to be of academic interest only.

The *age* at which this immunization procedure should be instituted appears to be somewhat controversial. Certain observers are of the opinion that effective antigenic response cannot be obtained much before six months of age. Sako[21], Bell[22], DiSant' Agnese[17] and others have satisfactorily demonstrated that protective antibody levels can be established if vaccination is begun as early as the second or third month of life if the preparation used is an alum-precipitated product and given with another antigen such as diphtheria or tetanus toxoid. Certainly it is desirable to institute prophylaxis as soon as practicable when it concerns a disease recognized to have such a high mortality rate in early infancy.

The immunization of other children in the family, isolation of the young infant and the use of immune human serum, though measures of importance and value, are often not sufficient to protect the baby from infection. It would therefore appear that effective immunization can be established by vaccination against pertussis beginning as early as the fourth to eighth week of life. Older children show little tendency towards reactions or any severity and may be vaccinated at any time. Most physicians feel that immunization after ten years of age is neither necessary nor indicated as it may result in the individual contracting the disease at a late date in life. "Recall" or "booster" injections of 0.5 cc. of the vaccine should be given at intervals of two to three years or during endemic periods and certainly following any known exposure.

When immunization measures are introduced at four to eight weeks of age they are 82 to 92 per cent effective. The *preparation of choice* is the alum-precipitated vaccine of Pase IH Pertussis, preferably given mixed with some other antigen, usually diphtheria, as work has conclusively demonstrated the superiority of this combination. Three injections, each given subcutaneously at monthly intervals, are sufficient to elicit an effective protection level. If the vaccinations are given at six months of life, the saline vaccine may be used in varying dosage at three- to four-week periods until a total of 100-120 billion organisms have been injected.

Until recently there has been no simple or routine test that may be employed to determine the effectiveness of the procedure, although the skin test has of late been shown by Halpern and Halpern[24] to reflect the serological and clinical observations. Perhaps this test will assume parallel significance to the Schick test. Certain more complicated laboratory tests may be made, but they are not practicable in the everyday practice of pediatrics. The best test is the individual's response to an intimate exposure, especially one within the home.

MEASLES (rubeola)

Although virus vaccines are not available for the prevention or modification of measles, several other methods or procedures may be employed for passive protection. Their use does not impart permanent protection, but merely protects the individual against the immediate exposure to the infection, or imparts a partial protection which permits the disease to run its course in a modified form, yet confers some degree of permanent immunity. It is therefore advisable to confine complete temporary protection to selected individuals such as young infants, children suffering from tuberculosis, an acute or chronic illness, debility, or those who are convalescing from a recent illness. Prevention of the disease may also be desirable in institutions such as hospitals, orphanages and schools. The objective in the use of any of these preventive measures where children under normal circumstances and in good health are concerned should not be to prevent measles but to convey partial immunity with the result that the child would experience the infection in a modified or mild form. Complications to this type of disease are rare. Permanent protection or immunity does not necessarily occur in all cases of modified measles, as a certain degree of illness is required to stimulate protective antibodies.

Immunity of the newborn to measles is comparable with that of diphtheria. If the mother has adequate antibodies to protect her against the disease, the infant will be protected until at least three months of age and probably until six months. Conversely, infants born of non-immune mothers may contract the infection at any age. Therefore the age of introducing protective measures is directly dependent on the immunity of the mother. These prophylactic measures differ from those previously discussed in that they can be employed only after exposure to the infection, and only impart temporary or partial protection against the given exposure. Re-exposure at a later date necessitates repeated protection, providing the individual did not develop modified measles at an earlier date.

Active immunity can be achieved only by experiencing the disease, as vaccination against this infection still belongs to the field of experimental medicine.

Passive immunization or modification can be obtained by the administration of polled human blood serum from individuals who have had the disease, by serum obtained from convalescents, by the globulin fraction extracted from the human placenta, and by the gamma globulin fraction derived from pooled normal human blood plasma. Of these the most readily available are convalescent serum and human gamma globulin and the latter is the procedure of choice.[25] When circumstances necessitate the use of the former, 5-10 cc. will usually temporarily protect a child if given within four days following exposure. If given on the fifth or sixth day, modification of the disease may be expected. Gamma globulin is at present preferred as the indicated dose is primarily based on body weight rather than on the time elapsing between exposure and infection. The administration of 0.1 cc. of the fraction per pound of body weight given within six days following exposure and infection is sufficient to protect a non-immune individual against the disease. If modification is desired, 0.02 cc. per pound given as late as eight days following infection is adequate.

Complete protection should not be expected when any of the preventive measures are introduced late in the period of incubation or in the early stages of the invasive period.

It should be remembered that the incubation period of modified measles, as well as the course of the disease is altered by this procedure, the incubation period not infrequently being as long as 21 days rather than the usual 14.

Reaction to gamma globulin are minimal and need no comment.

GERMAN MEASLES (Rubella)

Active immunization can only be obtained by experiencing the infection as vaccines for this purpose are not available. *Passive protection* is possible if adequate amounts of convalescent human serum or concentrated gamma globulin derived from human blood plasma are available. However, in view of the mild nature of this disease in males and non-pregnant females, such measures are rarely indicated. However, the disease assumes an entirely different significance when it occurs in a pregnant woman[26] and especially so if it occurs during the first trimester of pregnancy. It is now generally accepted that the occurrence of rubella during the first sixteen weeks of pregnancy seriously alters the normal growth and development of the fetus and sufficient evidence has been accumulated to indicate that such congenital anomalies as deafness, blindness, heart disease, mental retardation and other equally disturbing disorders may be the legacy of this disease. In fact the chances are 16 to 1 that the body will be defective in some form. From these facts the necessity of instituting preventive measures during the first trimester of pregnancy is self-evident.

Recent studies made in Melbourne[27] have brought forth several practical features which make it possible virtually to eliminate this disease during pregnancy. These observers have shown: 1) that the infection can be prevented by the administration of a concentrated gamma globulin fraction obtained from the serum of individuals recovering from a recent infection; 2) that the virus can be obtained at will, stored indefinitely and used to produce the infection as desired. Thus by inducing the disease in prospective brides the hazard is removed of a defective baby should infection occur during pregnancy (*Annual Report* 1947-1948 of the Walter and Eliza Hall Inst. of Med. Research, Melbourne, Australia).

VARICELLA

The clinical manifestations of this highly communicable disease, except in adults, are as a rule of such a mild nature that the introduction of prophylactic measures is seldom necessary. However, there may be circumstances in which prevention is desirable, such as in the control of institutional outbreaks, in debilitated individuals, in infants and children suffering from some other infection, and in older individuals with important missions. *Age* need not be considered, as the infection may develop in the newborn infant as well as in the grandparent.

The prophylactic measures which may be employed consist in the administration of human convalescent serum or human gamma globulin. It is the opinion of the majority of physicians that neither method is dependable though sometimes the disease may not develop in exposed individuals who have received this form of therapy[28]. The speaker[29] has vaccinated a large series of exposed individuals with the fluid obtained from fresh varicella vesicles and although there were occasions when it appeared that the infection was prevented yet in the vast majority of cases the measure was unsuccessful and the speaker became most unpopular.

MUMPS

Epidemic parotitis, like varicella, is usually of a mild nature and during infancy and childhood prophylactic measures are seldom indicated. Under certain circumstances such as in military camps, hospitals, institutions and in adult life protection may be desirable. Age does not appear to be a factor to consider when passive immunization is invoked, as the disease is rarely seen during early infancy and is encountered most frequently between the ages of five and fifteen.

Passive immunization may questionably be obtained by the administration of human convalescent serum or by human gamma[30] globulin. As the latter contains a greater percentage of immune bodies per cubic centimeter than convalescent serum, it is reasonable to assume that the globulin fraction in adequate dosages may prove effective as a prophylactic procedure. To date the volume of gamma globulin required to establish passive protection precludes its practical use. Further concentration of the fraction is needed. Extensive studies by Enders and his associates[31] have been made in the development of a safe, efficacious and practicable vaccine for the prevention of this disease and at the present time the results are most encouraging. Such protection is thought to last for only six to twelve months. Thus it would appear to be of military value but of little civil value.

The susceptibility or the immune state of the individual can be established by *complement fixation studies,*[32] as well as by an intradermal skin test[33]. This procedure is of real practical value to the practitioner, for not infrequently the classical signs and symptoms of the disease are absent and therefore the diagnosis is difficult to establish. The intradermal skin test affords a reasonably accurate index to susceptibility or immunity. This latter method is not yet available for general use.

SCARLET FEVER

To me there seems little reason for immunization against this infection. The use of the sulfonamides and the antibiotic agents are so effective in the prevention of beta hemolytic streptococcal infections in exposed susceptible individuals that it is difficult to accept the idea of immunization even among hospital personnel.

TYPHOID FEVER

The immunization of children against this injection is recommended only for those who are living in those areas where the disease is endemic —or who are traveling in such areas. For example, in Boston we do not use it except for the families of servicemen going on foreign duty where public health measures are questionable. Infants under one year of age are usually given a total of 0.5 cc. of the standard preparation 1.5, 0.1 cc., 0.2 cc., and 0.2 cc., at monthly intervals. Patients from one to four years usually receive 0.2 cc., 0.4 cc., and 0.4 cc.; the group from five to ten years receive three injections of 0.5 cc. each, while the group beyond this age period receive the adult dose. One tenth of a cc. given intradermally at two- to three-year intervals serves as an adequate "booster" or "recall" infection.[34]

POLIOMYELITIS

Good public health measures and common sense constitute our best protection against this disease. Vaccines containing the dead virus and others containing an attenuated virus have in the past been without success but actually with danger to the individual. Safety and effectiveness were not virtues of these earlier preparations and their use is ill-advised. However, there has been increasing experimental evidence that a multiple strain vaccine for human use may be developed.

The use of convalescent human serum for *passive immunization* is now recognized to be of no therapeutic value. The results of the studies made in Utah and Texas are the effect of pooled gamma globulin on the course of acute poliomyelitis have recently been reported by Hammon[35] and his associates indicate that when this agent is given *prior* to the onset of the disease paralysis may be prevented. This work has not yet been completed, so final evaluation can not be made although it certainly is one of the most encouraging advances in this field.

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Management of Pelvic Endometriosis *

CURTIS H. TYRONE, M.D.†
New Orleans, La.

PELVIC ENDOMETRIOSIS is becoming an increasingly important disease in medical practice because its incidence is increasing. For the past thirty years various investigators have studied this problem and out of their work has emerged a clearer understanding of the pathology and symptomatology of endometriosis. Theories as to its cause and mechanism of development have been propounded on the basis of pathologic changes[1],[2],[3] as well as from a clinical standpoint[4],[5]. From a purely clinical viewpoint our theory of the role of increased stresses and strains to which modern women are subjected[5] still seems as logical an explanation for the development of endometriosis as any of the more widely accepted theories, such as the one advanced by Meigs[4] that it is due to the delay in the normal function of childbearing caused by the current use of contraceptives. I cannot agree with Meigs' theory because I see more women with endometriosis in both the younger and older groups who have never used contraceptives and many women in the fourth decade who have previously had children and are anxious to have more.

There is no question that endometriosis is more commonly encountered in private practice than in our larger charity clinics. Is this because private patients are better educated, have higher standards of living, and have more responsibilities and interest in our social, political, professional and educational life? It has been suggested by some that the incidence of endometriosis has increased because pelvic infections have been controlled or eliminated by the sulfonamides and antibiotics. If this were true, then there should be a great increase in the incidence of this disease in charity patients and especially in Negroes but such is not the case.

The symptomatology of endometriosis is varied. Not every patient will present the typical symptoms of pelvic pain, dysmenorrhea, dyspareunia, vesical and rectal tenesmus and menstrual disturbances. Many patients undoubtedly have endometriosis and yet present none of the classical symptoms. Some of these patients might have definite, large ovarian masses or involvement of the uterosacral ligaments and exudates in the cul-de-sac with a retroverted and fixed uterus and yet they have neither pelvic pain nor menstrual disturbances. On the other hand, we see patients who, as far as can be determined from the history and pelvic examination, have only minimum involvement of the pelvic organs, yet present all the classic symptoms of endometriosis.

Endometriosis is such a complex condition that treatment cannot be standardized to apply to all cases. Of course, no one can argue against the advice to young women that pregnancy is important and there is no question that pregnancy does delay or retard progress of the disease but there is also no actual proof that it cures this condition. It is important that these young people complete their families as soon as possible so that if the condition progresses and symptoms become disabling, more curative measures can be instituted without the necessity of considering the patient's desire for future pregnancies.

Many unwarranted statements concerning the treatment of pelvic endometriosis have been made. For example, it has been stated that all patients with endometriosis should be left alone and no treatment is indicated. It is true that many patients with this disease have no symptoms and the pathologic changes are not extensive; in such cases treatment is probably unnecessary. However, it is certainly erroneous to say that all patients require no treatment.

Another misconception is that all patients with endometriosis should be treated by hormones alone. This is certainly untenable. If the patient has no symptoms, why should she be subjected to extensive and costly treatment with hormones, since they do not affect the pathologic process and at best produce amenorrhea, which will reduce the possibilities of pregnancy and produce a tension state in these women that is worse than the original disease?

Finally, it has been fallaciously stated that all patients with endometriosis should be treated surgically, always conservatively (removal of the adnexa, suspension of the uterus, presacral neurec-

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* Presented before Section on Obstetrics and Gynecology at the meeting of the Mississippi State Medical Association in Biloxi, May 11-14, 1953.

† From the Departments of Obstetrics and Gynecology, Ochsner Clinic and Tulane University School of Medicine, New Orleans.

tomy, and removal of endometrial implants) or always radically (total hysterectomy and bilateral salpingo-oophorectomy whether or not both ovaries are involved, with or without presacral neurectomy). All cases of pelvic endometriosis do *not necessarily* require surgical treatment, and if operation is indicated, then it is not possible to state dogmatically that all operations should be either conservative or radical, because again the type of surgical treatment must depend on a number of factors. No one would argue with the statement that all patients with acute appendicitis should have an appendectomy, but there is no one surgical procedure that is applicable to all cases of endometriosis.

In the younger age group surgical treatment is indicated only in those women who have failed to conceive, or whose disease has destroyed organs, such as the ovary, or is producing classic symptoms. In such cases operation will not only relieve symptoms but it will arrest extension of the disease, prevent or delay future destruction of vital organs and enable the patient to conceive. As conservative an operation as possible should be performed. For instance, an ovary should be removed only if no healthy ovarian tissue can be preserved. Other conservative procedures include resection of areas of endometriosis from the ovary, releasing adhesions, excision of implants on the uterosacral ligaments and cul-de-sac, and suspension of the uterus. It should be emphatically stated that in women requiring excision of one ovary because the disease has virtually destroyed it, the other ovary must be preserved if it contains any healthy tissue.

There is another older group of multiparous women who naturally can be expected to have more pathologic changes and therefore more disabling symptoms. These patients are usually between 35 and 45 years of age and for this reason more radical surgical procedures can be considered. In patients complaining of menstrual disturbances such as hypermenorrhea and polymenorrhea, increasing pelvic pain, dysmenorrhea and dyspareunia, with a hyperplastic, retroverted, adherent uterus usually containing fibroids or adenomyomas, total abdominal hysterectomy should be done. If only one ovary is diseased and the other one is normal, then only the diseased one should be excised. There should be no concern over the estrogenic effect of a normal ovary reactivating an endometrial process in the pelvis, and I do not believe normal ovaries should be removed in these patients who have not yet undergone the menopause. However, if both ovaries must be removed, hysterectomy should be performed even though the uterus appears to be normal. If it is necessary to remove both ovaries in these patients and if annoying symptoms attributable to an artificial menopause develop, there would seem to be no objection to attempting to relieve these symptoms by appropriate hormonal therapy.

Radium with or without roentgen-ray therapy has only limited use in the treatment of pelvic endometriosis. It must be remembered that radical treatment of endometriosis is performed for extensive pathologic processes and increasing symptoms, of which pain too often is the most prominent one. It is doubtful whether radium or roentgenray would relieve the severe pain and they certainly do not cure pathologic changes that have already taken place.

A word of caution should be sounded about too much meddlesome surgery being done under the guise of the diagnosis of pelvic endometriosis, particularly in younger women. Merely because a young woman complains of varying degrees of pelvic pain, which could be due to disease of the digestive tract or dysmenorrhea, and which too often is psychogenic, is no indication for pelvic exploration for suspected endometriosis. As a corollary, I am not too sure that surgical procedures should be more often considered and carried out by the conscientious practitioner or the experienced pelvic surgeon.

A final word should be said about pelvic endometriosis and cancer. There is no evidence today that endometriosis is a precipitating factor in cancer. Moreover, the occurrence of malignant changes in endometrial tissue is indeed rare. Yet almost every day I see some patients who immediately express the fear that cancer will develop when they are told that they have endometriosis.

CONCLUSIONS

1. The incidence of endometriosis is increasing in private practice.

2. Not all patients with endometriosis require treatment.

3. Hormonal therapy is usually ineffective in the treatment of pelvic endometriosis.

4. If surgical treatment is indicated, it should be as conservative as possible in the younger age group.

5. If surgical treatment is indicated in the older age group or in those whose families are already

Accepting the Challenge*

LAMAR ARRINGTON, M. D.
Meridian, Miss.

FOR MANY REASONS, I have looked forward to this occasion when I could render my account of stewardship which you entrusted to me two years ago in this room. Before I assumed the office, I often thought of the parable of the worthy servant, and I hoped that when this occasion came about that I might be able to return your talents ten-fold. Now, I realize that I must not belabor you with what I have tried to do, but rather what we have done together, so if there are additional talents accomplished, then they are realized from the joint fruits of our work together. I welcome you here tonight as we examine in retrospect the year just behind us and as we plan and work for the year ahead.

In the House of Delegates, in the Council, among the officers, and in the committee meetings, you have already heard much of what your association did during the year. Remember that every undertaking and project was in the interest of medicine toward the end of the best possible medical service for all under a free system of self determination and personal responsibility.

And we shall work to keep it that way.

Your association has grown during the year. Membership increased to the extent that we were authorized another delegate to the American Medical Association. This growth was about twenty per cent, and this means that where there were five, there now six. Particularly do I commend the younger members of the profession who have qualified for election to membership this year.

The elected and appointed committees have been energetic and fruitful. They have studied, planned, explored and recommended action in many fields. These include the scientific, economic, public relations, organizational, as well as governmental and business as may pertain to the profession. The members of these committees who have given so freely and generously of their time and ability are due our profound appreciation.

Your officers have been active and interested. Wherever I went through the state, I found both the state and local society officials going about their tasks with enthusiasm and vigor. Your councilors have responded readily and wisely to calls for their advice and decision. The local society officers have acquitted themselves splendidly in the matters of membership, meetings, and worthwhile programs. The secretaries of the local societies deserve special commendation for the tremendous amount of work they do which we tend to take for granted.

The membership at large also shares the credit and commendation for the advances of the association and profession.

Finally, we should all look forward to the future with confidence when our capable president-elect assumes office. He will do great things for you.

If you read your pocket membership card closely, you noted the phrase, "Founded December 15, 1856". Your association will be ninety-seven years old next December.

You must give serious thought to the needed financial resources of your association. The dues you pay are the lowest state dues in the nation. Yet, I believe that our association would rank among the better constituent state societies of the American Medical Association. For these reasons, we must insure this position and provide the resources needed for greater service. In the House of Delegates, I will join other official groups in making this recommendation.

You must secure your professional future and the future of the profession. There is no ceasing the fight which has been successfully waged since 1949, for the threat to free America is still the threat to medicine. This is socialization. Instead of government proposals of compulsory health insurance and open socialization of the art and science which could not have existed through the centuries except on the basis of professional responsibility by the individual physician, we now have the back-door threats and under-the-table moves to effect socialization by treaty, by welfare benefit, by complex bureaucracy, and by those whose efforts are directed at undermining the very economic system which has made our nation the greatest of the world.

As individuals, you can only be as effective as your county medical society, your state association, and your American Medical Association. If you do nothing more than to stand and be counted by the regular payment of annual dues you shall have helped.

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*President's address delivered before the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 12, 1953

If you attend meetings as an interested, attentive member, you have helped and supported organized medicine.

If you take an active part in the work as a committeeman, delegate, or officer, then you shall have helped, supported and made yourself completely effective.

Take your choice of participation, but participate as you value your professional life.

You must fulfill a further professional responsibility as a physician, and this responsibility has a background story. In recent years, we have witnessed the emergence of many volunteer health organizations, Foundations, associations, and societies have sprung into being on every side of us for the purpose of disposing of every human ailment from cancer to the common cold. I commend each and every effort which would make real the opening lines of the preamble to our Constitution, "That more may live longer in the richness and comfort of health. . ," and I have personally supported these groups. As physicians, we should support and be active in these enterprizes and here is found the key to the further professional responsibility for which I have asked.

Most of the societies, foundations and associations depend upon voluntary contributions to finance their operations and activities. To secure this backing, they are necessarily extensive, perhaps disproportionately extensive to their effectiveness. That, however, is both their affair and problem. These groups necessarily are dominated by laymen, yet they concentrate their activities in what is essentially a medical field. But how is medicine now stacking up against these groups in financial resources and public influence? Are the servants becoming masters? Frankly and briefly, are these subsidiary activities telling the doctor what to do?

Examine, if you will, the resources and budget of any such volunteer health association, society or foundation. I venture that there are none in Mississippi whose budgets are less than three to twenty times greater than that of the Mississippi State Medical Association. Their state officers, or most of them, are many times the size of ours. They call on us for committees and sometimes presume to outline the policy under which the committee works.

If the physicians with whom I have discussed these matters were sincere, and I believe that they were, then there will be more who agree with me than there are who may be shocked at this direct approach to what can become a real problem for medicine.

In an effort to be positive and constructive in this matter. I have some broad recommendations.

First, I endorse the principle proposed last year of electing advisory committees to work with volunteer health organizations. To a maximum possible extent, this places the selection of these groups before the Association's democratic majority, as opposed to the autocracy of appointment.

Secondly, I would ask the organizations to leave medical decisions to physicians. By this, I mean that medical policy ought to be the final determination in such projects as indigent treatment programs, mass screening examination, and the like.

Third, I ask the Association's membership at large to be active rather than passive in connection with these programs. It's easy enough to be a Monday morning quarterback, and the exercise of hindsight has never required the physical energy nor mental effort demanded by foresight. If the gripes, griefs, and grievances are laid before the local society and Association with an attitude of detachment from impulse and a dispassionate impartiality, we shall have begun the final phase of solving problems and achieving cooperation.

Fourth and finally, I urge your support of volunteer programs thus conducted. Nobody wants to argue that any work in the health fields is valueless so long as it is built on the enduring foundation of sincerity, free choice, and objectivity as opposed to the personal subjectivity of ego, bureaucracy, or selfish gain.

If I fail to make this attitude perfectly clear, then the service I intend to render will fall short of materialization. By the same token, a misunderstanding of this appeal on the part of the volunteer health groups will culminate in a disservice to all.

A single stroke of the gavel tomorrow will end the Association's year. Better than give ourselves to nostalgic reflection, let us devote our energies to a better day ahead. This has been a busy year for us all, and the responsibilities and commitments of the office have weighed upon me. But every day of it has been an inspiration to me and a reason to try to serve better. From my heart, I am grateful to you.

Reconstructive Surgery

JAMES H. HENDRIX, JR., M. D.
Jackson, Miss.

Reconstructive or plastic surgery is the relief of congenital and acquired deformities, functional or cosmetic or both, by the application of certain techniques modified to fit the requirements of the individual problem. These techniques are 1) the re-arrangement of existing tissues; 2) the use of flags of tissue from adjacent or distant areas of the body; and 3) the use of free transplants of skin, subcutaneous tissue, fascia, cartilage, bone, and so forth.

For the most part plastic surgery is not concerned with any particular region of the body as these techniques are applicable in almost all cases. The scope of this field, as in any other specialty, is limited chiefly by special interest, knowledge, and skill of the individual surgeon.

Through demonstration of a few specific cases I propose to demonstrate how the three techniques previously mentioned are applicable in a wide variety of cases.

PTOSIS

Congenital ptosis of one or both upper eyelids is treated fairly successfully. The procedure most often used, I believe, is the fascia transplant with the attachment to the frontalis muscles. Recently I have utilized the procedure which was first described in the *British Journal of Plastic Surgery*. This utilizes a strip of orbicularis oculi as a sling to attach to the tarsal plate.

CLEFT LIP AND CLEFT PALATE

These cases occur in approximately one out of every 750 births. It is desirable to repair the lip when the patient is between two weeks and two months of age. It is usually desirable to repair the palate at about two years of age. Often after the preliminary repair of the lip, a slight touch-up operation to the vermilion border or nostril is indicated, usually at six to ten years of age. The object in the lip repair is to have a normal shaped upper lip with as little scarring as possible. Recently there has been more attention devoted to the nostril and to the production of a normal crease in the upper lip with the resultant pout. These cases should never be considered an emergency, as the first repair job usually casts the die. If improperly repaired the first time, a bad result is often obtained even after several corrective procedures. The primary object of the repair of the palate is to obtain a palate which is long enough to close off the naso-pharynx. Only in this manner can you expect to obtain normal speech. Evenso, normal speech cannot be obtained in all cases, but it can be expected in a large number when a good surgical repair with a minimum of scarring and a long palate has been obtained. It is practically always necessary to give speech training as an adjunct. Recently there has been a great deal of stir in lay literature in regard to the fitting of prostheses for cleft palates. On reading these articles, one would be led to believe that this is the preferred method of treatment. The fitting of prostheses for the average cases is definitely not the procedure of choice. Prostheses are used as a last resort in cases which have been improperly repaired and in which there has been a loss of large amounts of tissue. Consultation and close work with the orthodontist is

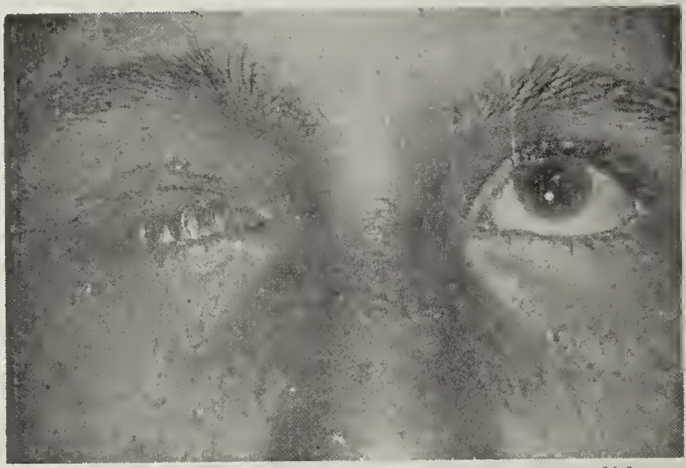

Fig. 1. Ptosis, congenital, right upper eyelid.

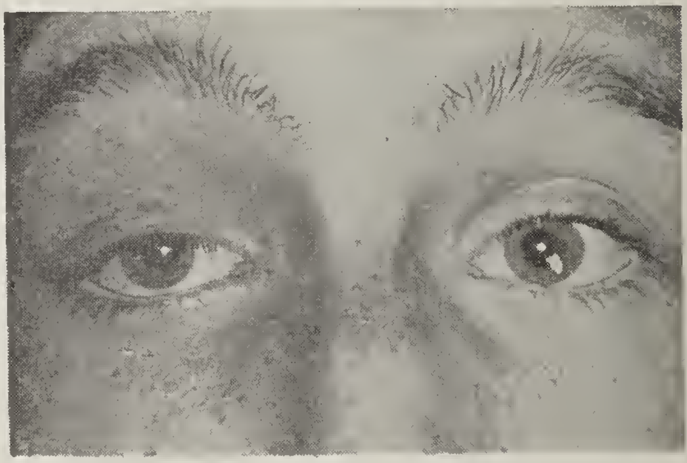

Fig. 2. After correction of ptosis with orbicularis muscle sling.

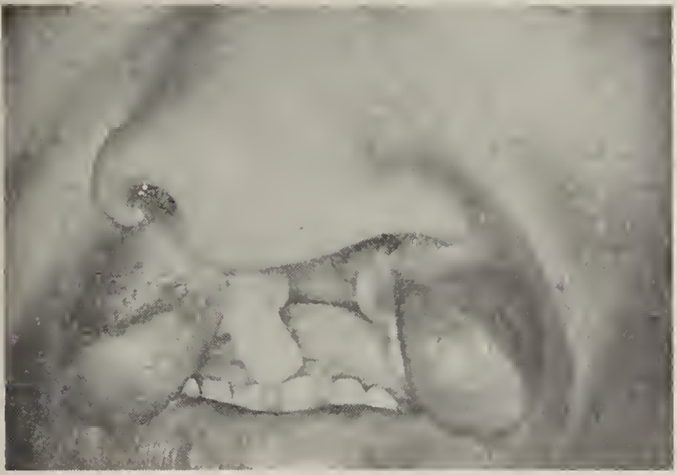

Fig. 3. Cleft lip, complete.

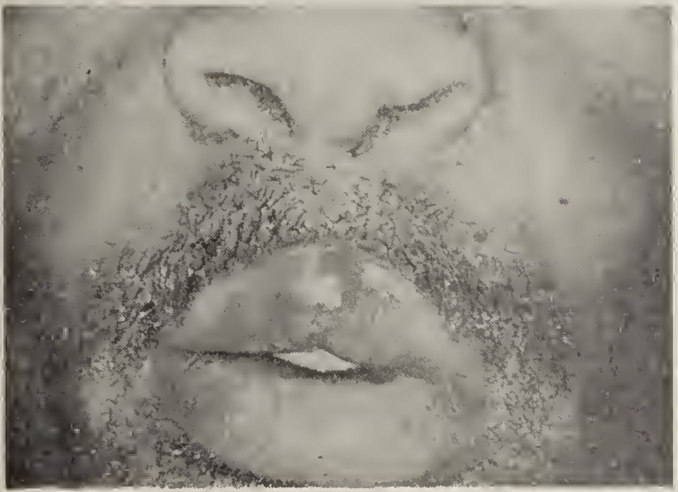

Fig. 4. Seven days after cleft lip repair.

frequently necessary to help mold the alveolar ridge properly. Occasionally, after the permanent teeth have erupted, a small prosthesis is indicated to supply the missing teeth.

DEFORMITIES OF THE NOSE

Rhinoplasty is often performed because of the hump nose deformity. The hump is not only removed, but the nose is shortened and narrowed to achieve the proper proportions. Frequently the appearance of the whole face is changed by correcting its most prominent feature — the nose. The improvement of personality and the general outlook of the patient is very great. The deflected nose is usually the result of trauma, and the treatment of this type nose is similar to that of the hump nose. The so-called saddle nose, or flat nose, may be the result of trauma, disease, or may be congenital. Correction of this is usually carried out by inserting a preserved cartilage implant. The rhinoplasty is very satisfactorily performed under local anesthesia. The postoperative pain is practically nil. There is usually loss of from one to two weeks from work as bandages are necessary during this period. Large defects of the nose may be repaired in most instances by using a flap from the forehead or cheek. If the defect only extends through the skin, full thickness skin grafts from the supra-clavicular region of the neck usually blend in well so that they are not noticeable. It is desirable to break the graft margins up so that they are not a perfect circle; then they are far less noticeable.

FLOP EARS

Prominent ears are a great source of embarrassment and a feeling of great inferiority to both children and adults. Even little boys only four or five years old feel their inferiority because of the teasing of playmates who call them "Jumbo" and Elephant Ears" and other taunting names. These can be corrected very easily under local anesthesia, leaving a small scar well hidden behind the ear. Flop ears can be corrected at the early age of five to seven years because the ears grow very little after that age. In cases of avulsion of the ears as well as congenital deformities it is oftentimes necessary to reconstruct the external ear by the use of grafts of cartilage and skin.

PITTED SCARS

One of the most common and most disheartening facial disfigurements is the scarring caused by acne and smallpox. These acne pits and pock marks have been borne with little hope of relief and with a feeling of self-consiousness and a severe inferiorty complex in most cases. Many of these cases can be handled by abrading the skin under local anesthesia, following by a pressure dressing for about one week. During this week the epithelium regenerates and the resulting skin is much smoother and more even. A similar method is very effective in cases of traumatic tattoos in which grit and cinders have been ground into the skin or bits of oil or foreign material have been blown into the skin in explosions. By abrading the facial skin in stages this material is quickly removed. Actual tattoos are best removed by removing the outer layers of the skin with a dermatone or by excision.

HEMANGIOMA

These lesions when of the large soft cavernous type are treated successfully by several methods. Some of them respond well to injections of sclerosing solutions. In most cases this will shrink the lesion so that it can be more easily handled surgically. Occasionally this will shrink the lesion

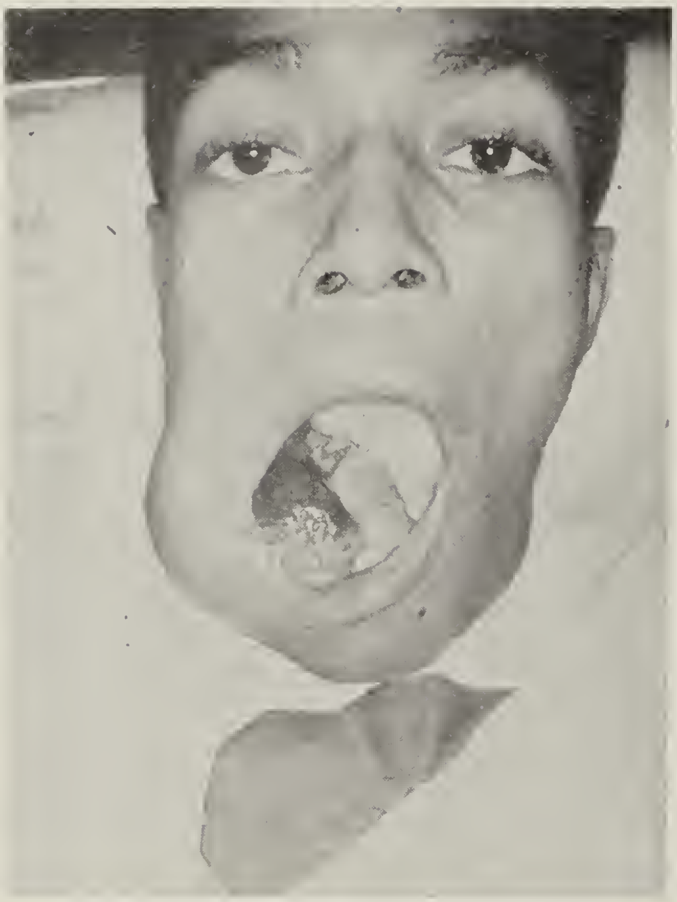

Fig. 5. Non-ossifying fibroma of mandible.

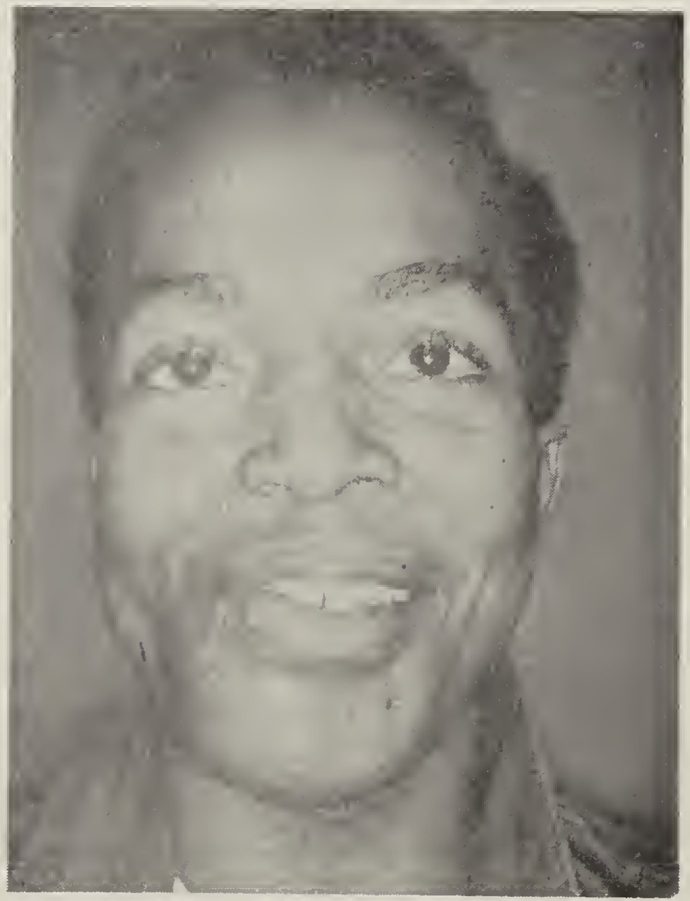

Fig. 6. After resection of mandible from midline to right angle. Bone graft to be performed later.

sufficiently so that no further treatment will be indicated. For the most part, however, surgery affords a rather rapid correction of the difficulty with good functional and cosmetic results. Tattooing is successful in camouflaging some of the capillary stains.

SEVERE LACERATION AND AVULSION INJURIES

In these cases an attempt should be made to save all the tissue possible. Only the obviously devitalized tissue should be sacrificed. Frequently it is like a jig-saw puzzle to fit them back into place. These cases are time-consuming and the work is laborious, but the rewards are great. A final touch-up or revision will often be indicated in three to four months. In avulsion of the skin of the penis and scrotum, the shaft of the penis can be nicely grafted with a split skin graft. Skin remnants left attached at the corona should not be saved in most cases. If such tissue is used it will always remain edematous and excision later is necessary. The testicles can usually be saved by burying them in the thighs temporarily. They can be brought away later in flaps. Recently I have had two such cases from injuries in combine machines.

CONCLUSION

The first problem in traumatic lesions of the hand lies in an accurate diagnosis of the deformity which is usually much greater than is apparent on superficial examination. The injuries lie in the field of plastic, orthopedic and neurosurgery alike, but since repeated operating provokes new trauma, the lesions are best treated in one stage if it is at all feasible. In many cases a temporary thick-split skin graft applied to the palm at the time of the injury will prevent a contracture which is later exceedingly difficult to remove. The covering of raw areas also eliminates chronic infections with resultant stiffening. It is greatly worth while to repair small digital nerves.

HAND INJURIES

The refinements of technique and certain principles which are usually referred to as plastic principles are actually principles of general surgery in the best and most refined sense, based on sound physiologic basis. The rules or principles include the directions of incisions, techniques of undermining to relieve tension on a suture line, the use of Z-plasty, the methods of application of skin grafts, the use of pressure dressings, the importance of closing wounds on the face accurately and in layers with fine material. There is not one of us who is not proud of a fine hair line scar which is evidence that we can "sew a fine seam."

720 E. Fortification.

The Department of Surgery in a University Hospital and Medical School

JAMES D. HARDY, M.D., F.A.C.S.†
Memphis, Tenn.

THE DEPARTMENT of surgery in a medical school bears three obligations to the surrounding area and to the medical profession at large. These obligations are teaching, patient care, and research. To be of first rank the department must provide leadership in each of these fields. It will be universally acknowledged that the department must teach. It follows that the department must care for the patients on its wards in a competent manner, if trainees are to be taught the proper methods by which to treat their patients of the future. Finally, if the department is not to be merely a parasite, feeding upon the advances brought about by departments elsewhere, it must undertake and carry out original investigation which will add to the sum total of medical knowledge.

THE TEACHING FUNCTION

The primary obligation of a university faculty is to teach. In the case of the surgical faculty this teaching must include instruction for undergraduate medical students, student nurses, interns, residents, and physicians in practice.

Undergraduate Instruction

The entire medical curriculum is being critically reexamined by several national committees and by certain medical schools, and surgical teaching will surely be more closely integrated with the entire four years of instruction than has previously been the case. It is quite possible that "surgery" and "medicine" will come to be taught almost as one course. The competent internist is sufficiently aware of the surgical implications of biliary or thyroid disease to impart to students a clear grasp of what surgery has to offer in these conditions. Likewise, the competent surgeon is capable of similar comprehensive teaching in specified fields. We have never seriously attempted to teach medical students surgical technic. By merely eliminating duplication in the curriculum (the signs of thyrotoxicosis in the "medical" patient are strikingly similar to the signs of thyrotoxicosis in the "surgical" patient) many student hours can be saved for leisurely reading or for more effective instruction in those social, economic, and psychologic factors and motivations which fashion all our lives. Moreover, surgery itself will be taught more effectively through integration with all other branches of medicine. For example, though physiology, pharmacology, and biochemistry are usually taught as separate courses, these disciplines, artificially separated in the medical school curriculum, must in the student's mind become fused into a single core of knowledge before this information can be effectively employed in the treatment of patients. The same holds true for the entire medical curriculum. This is teaching at the undergraduate level.

Resident Training in Surgery

The teaching hospital was the cradle of the residency system as developed in Germany and brought to this country by William Halsted. It is the teaching hospital—more specifically the university teaching hospital—that is best suited to the training of finished residents under the classic residency system. The resident developed under such a system, if he has been invited to remain for the full five years of training, should be capable of pursuing a career in either academic surgery or in private practice with equal likelihood of success. It is axiomatic, therefore, that the university hospital must seek not only superior assistant residents but that it must also expect that the applicant will continue his training until board qualification has been achieved, provided that the resident continues to do satisfactory work from year to year. The resident who wishes only two or at most three years of surgical training, before entering a community practice, should more properly be trained by hospitals other than the university hospitals. Above all, the residency system should aim at a finished surgeon who is fully rounded. The chief resident, being in his fifth year of training, should be a good diagnostician, a competent independent operator, and a devout apostle of good preoperative and postoperative care. In addition to two or three pre-

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University of Tennessee
† Department of Surgery and Surgical Laboratories, Memphis, Tennessee.

vious years of general surgery, he will have rotated through orthopedics, urology, gynecology, and possibly neurosurgery, in addition to having spent time in the laboratories of pathology, anatomy, and clinical investigation. He will have aided extensively in the teaching of medical students, he will have presented papers before medical societies, and he will have made contributions to the literature. In short, increasing responsibilities will have been accompanied by increasing opportunities until, in his final year, the associate resident who has been appointed chief resident finds himself running the ward service—and he must see that it runs well and that all patients get the best possible care. His judgment must be such that he consults freely and continuously with the members of the attending staff on questions about which he is not certain. The residency system, properly supervised, has been demonstrated to be the best system yet devised for the training of finished surgeons in general surgery and in the surgical specialties.

Postgraduate Instruction

There is an enormous opportunity on the horizon for the postgraduate instruction of practicing physicians. While this opportunity and this obligation of the medical schools toward the practicing physician has not always been fully recognized, the growing number of institutes, clinics, and refresher courses offered by medical centers attest to the gradual awakening of teaching units to this wider responsibility. It is to be anticipated that such efforts will be expanded rapidly until virtually every practicing physician comes under the prompt influence of the newer ideas and methods which are constantly flowing outward from the university centers of teaching, patient care, and research.

The Instruction of Interns

Much has been said regarding what the intern should be expected to do and what he should not be expected to do. The year of internship is a year of tieing together the many facts at the disposal of the student as he graduates from medical school. Those facts which cannot be tied together will usually be forgotten. In many respects this year is the most important of the five years spent in medical school—for surely the internship represents the indispensable fifth year of the course. In the writer's opinion, no doctor should enter the practice of medicine until he has experienced the balancing influence which comes only with daily clinical responsibility for the care of actual patients in the internship. Many physicians have not achieved this clinical balance ("judgment") even at the close of the internship, but few can fail to have had their medical school impressions corrected, modified, or strengthened by this trial under fire.

What is expected of the intern on the surgical service? What does he receive in return? We are old fashioned enough to believe that the intern should be expected to work until his immediate responsibilities have been completed, for these responsibilities will be immeasurably greater in practice and he should become accustomed to accepting the discipline required for competent performance in the practice of medicine. His daily labors will inevitably entail a certain amount of "scut work", such as starting intravenous infusions, maintaining complete records, catheterizing patients, and taking routine histories and physical examinations. However, the superior intern rarely considers that he is being exploited by being required to perform these functions—he is too busy learning to do these things well. Furthermore, the superior intern almost always becomes a superior resident; he has complete insight into the workings of the service and, as resident, he can instantly spot the intern who is performing unsatisfactorily.

The intern should, in return for all he gives, receive continuous instruction. This instruction should be both organized and unorganized. In addition to a series of conferences concerning various important topics taken up in a semiformal manner, the intern should be made to feel himself an essential part of each service he finds himself on. Day in and day out, he should be learning on ward rounds, in the operating room, at the x-ray view box—yes, and in the lounge and in the dining room. All of us know that our interests and ideals have been greatly influenced by teachers and other individuals whose interest in us or in medicine lighted the way. The internship is a time for daily personal contact with active clinicians. It is a time for weighing this chief's methods against that chief's methods. It is a time when the physician's future course is usually decided. Above all, it is a time for learning, with no arbitrary boundaries between "courses". This is what the intern receives.

Instruction of Nurses and Anesthetists

Each clinical department has a vested interest in seeing to it that the hospital's nurses receive the best possible instruction. We have observed hospitals where the scheduled lecturer would call the nursing school office at the last minute, and with the most flimsy of excuses, to say that he would not be able to meet the class which has already practically assembled. Thus, forty hours of instruction were sacrificed (forty students x one hour). Fortunately, most surgical staffs do not relegate the instruction of nurses to the most junior residents and they do require that all classes be met. The nursing services invariably respond to such consideration with an enthusiasm which is promptly reflected in better patient care. Nurses should receive the best possible teaching in preparation for their indispensable role in our system of medicine.

It is clear to most physicians who face realities that the deplorable shortage of anesthetists which exists will not be relieved by adequate numbers of physician anesthesiologists in the foreseeable future. This specialty simply does not attract sufficient numbers of physicians. Therefore, the only practical solution of this problem is to encourage greater numbers of nurses to enter this field and to train these nurse anesthetists adequately. Departments of surgery should assist their anesthesiology divisions in carrying out such a program, for university centers must continuously export trained personnel if the best standards of medical practice are to be maintained in the non-academic communities.

CARE OF PATIENTS

It is commonly conceded that the care which patients receive in a university hospital is generally of a superior quality. What are the reasons for this? The reasons are many but basically this care is a reflection of the fact that the university hospital is a teaching hospital. High standards of performance are required of the interns, residents, nurses, and staff members. Fundamentally, it is the medical student, properly oriented, who demands these higher standards of patient care. He comes to the wards with an open and a questioning mind. If the patient does not do well, the student asks why. The student is forever asking "dumb" questions which his teachers frequently cannot answer, but such questions merely spur the good teacher to find out the answer. Thus a research project may be initiated. Moreover, the love of truth, of hard facts, should abound in a teaching center. Such motivation is likely to result in a correct diagnosis, leading to the correct therapy. In addition, the teaching center has available many procedures, various types of expensive equipment, and different specialists which many private hospitals, particularly the smaller ones, cannot support.

To be really effective as a teaching hospital, the institution must be in a position to favor the admission of cases which have definite teaching value, if a limitation of space precludes the admission of all applicants. The teaching hospital must also return all patients to the referring physician, if he is to be expected to refer patients of teaching value. And it is hardly necessary to add that the referring physician must receive a comprehensive report upon the discharge of the patient from the hospital.

Finally, though the scrupulous maintenance of high standard of patient care is to be looked upon as a teaching function of the university hospital, it is also to be remembered that the primary obligation of any hospital's patient care program is to the patient himself and to his welfare.

RESEARCH IN CLINICAL SURGERY

In addition to teaching and the care of patients, the department of surgery in a university hospital must do research. Though virtually all organs of the body are now accessible to surgical attack, no one would argue that surgical results cannot be improved. Indeed, it is certain that surgical results will be improved, for surgical horizons are limited only by the confines of the imagination. Broadly speaking, surgical progress has ever been confronted by two general types of problems: 1) basic physiologic problems, common to all types of operations, problems concerning the factors which permit the individual to survive any operation, and 2) technical problems, usually peculiar to a particular operation, such as those problems the solution of which has made possible successful valvulotomy for mitral stenosis. Both these types of investigation are important to the progress of surgery. The first type requires laboratories of chemistry in which exacting procedures and measurements can be carried out on blood, urine, and other body fluids and components. The second type of investigation involves the use of the animal laboratory, where physiologic problems and problems in surgical operative technic can be solved. Both the chemistry and the animal laboratories are necessary to a strong department of surgery.

Quite aside from the new facts unearthed by a research program, such a program has a great teaching value in molding the minds and points of view of the surgical residents in training. If the resident working on a problem should make an observation that is of great value, so much the better, but if he merely plans a good experiment, carries it through, and writes it up, he has indeed made a significant contribution to his own training and, therefore, to surgery at large.

SUMMARY

The department of surgery in a university medical center has three obligations—teaching, patient care, and research.

BOOK SECTION

Atlas of Rush Pin Technics

LESLIE V. RUSH, M. D.
Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

INSTALLMENT 3

This is the third of a series of monthly installments to be published in the *THE MISSISSIPPI DOCTOR* during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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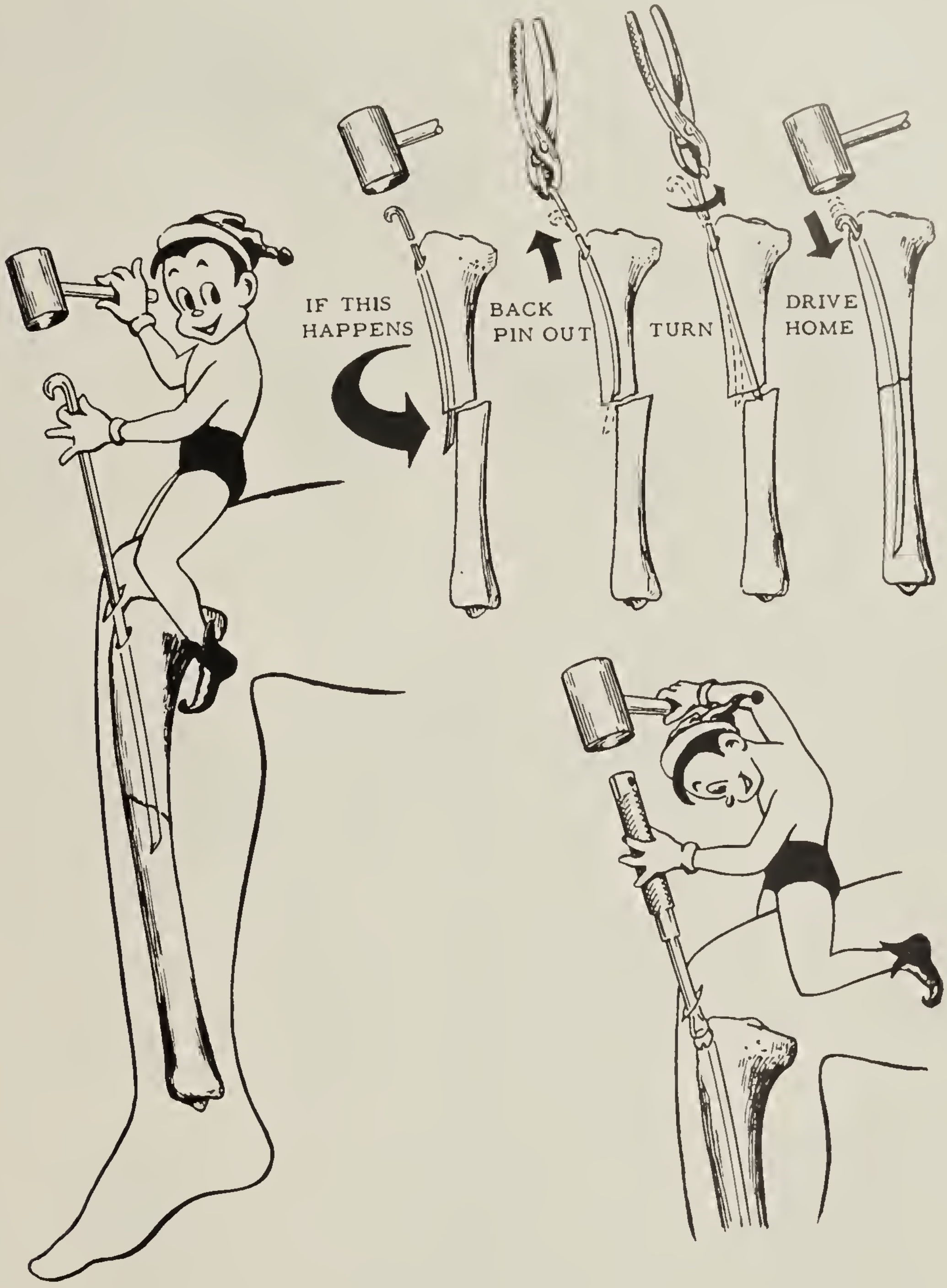
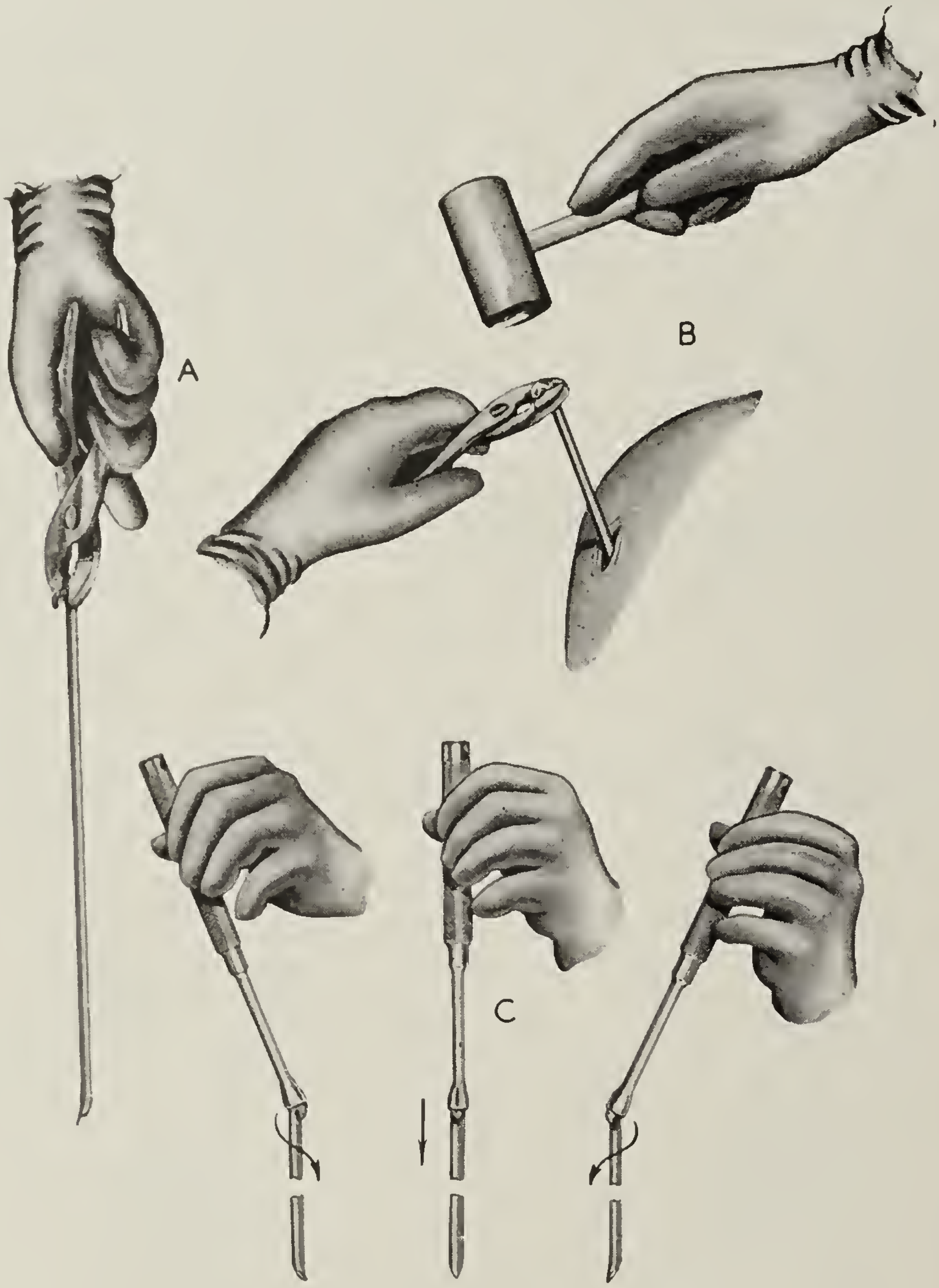


Easy Does It

Once the point has entered the medullary cavity the pin should drive easily and without pounding. When reduction is perfect, the pin should cross the fracture line uneventfully.

If there is some offset in the position of the distal fragment, the pin may have a tendency to pass out of the bone through the fracture line. In this event, withdraw the pin partially until the point is approximately to the fracture line. Rotate the pin with pliers 180 degrees on its long axis. When the pin is again driven, it can usually be guided into the distal fragment by this maneuver.



Guiding the Pin

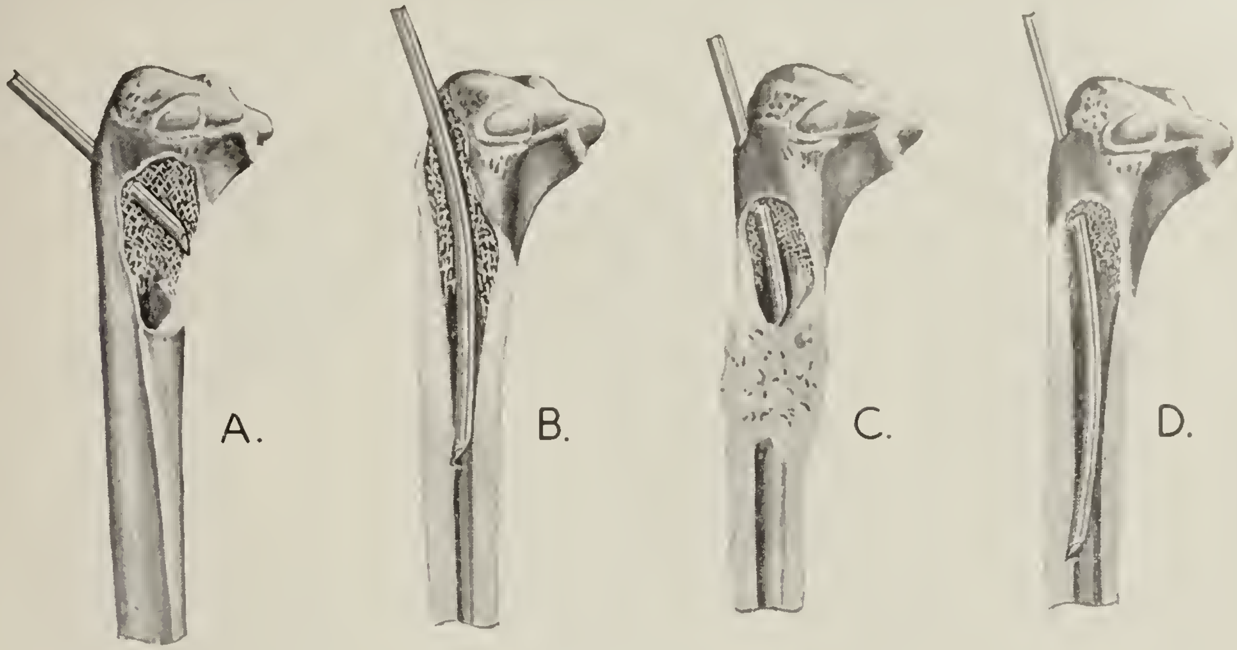
Remember that the point always faces the same direction as the hook of the head. The point can be guided as the pin is driven by:

(A) Rotating the shaft of the pin with a pair of pliers.

(B) Holding the head of the pin with a pair of pliers as the pin is driven.

(C) Using the driver-extractor instrument which allows the direction of the point to be influenced by the angle of inclination of the driver-extractor instrument. If it is inclined to the left, the head and point rotate to the right as the pin is driven. If the instrument is held vertically, the pin is driven straight. If the driver-extractor is inclined to the right, the head and point are forced to rotate to the left.

It is always necessary to set the head and point at the desired position when the pin is completely driven home.



If the Pin Doesn't Drive

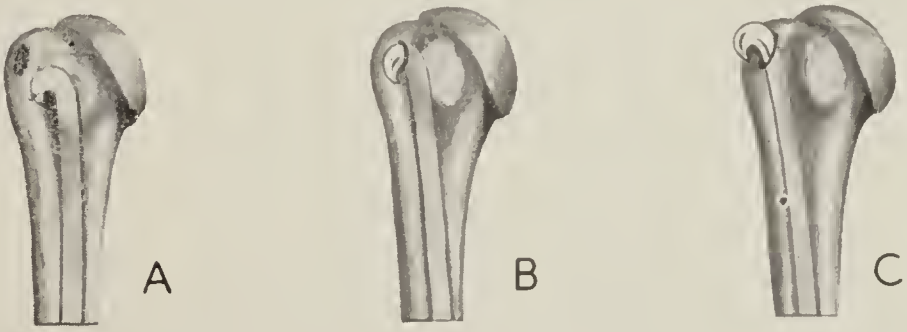
Rarely in young adults it is difficult to drive a pin through the dense cancellous bone. But, generally, the pin should drive easily. Do not continue hard pounding if it does not drive. Correct the trouble.

(A) If the angle of insertion is too horizontal, make a new opening more closely approximating the long axis of the bone.

(B) If the medullary cavity is too small for the size pin used, remove the pin and insert a new one of smaller diameter.

(C) If the medullary cavity is closed from a previous fracture, it is necessary to ream a new medullary cavity in order to drive the pin.

(D) If the point becomes arrested by hanging up against the cortex, disengage it by rotating the pin 180 degrees on its axis with a pair of pliers. Such an impingement is most apt to occur in a curved bone such as the radius. Remember that in driving down a curved bone, it is necessary for the sled runner, not the point, to engage the cortex.

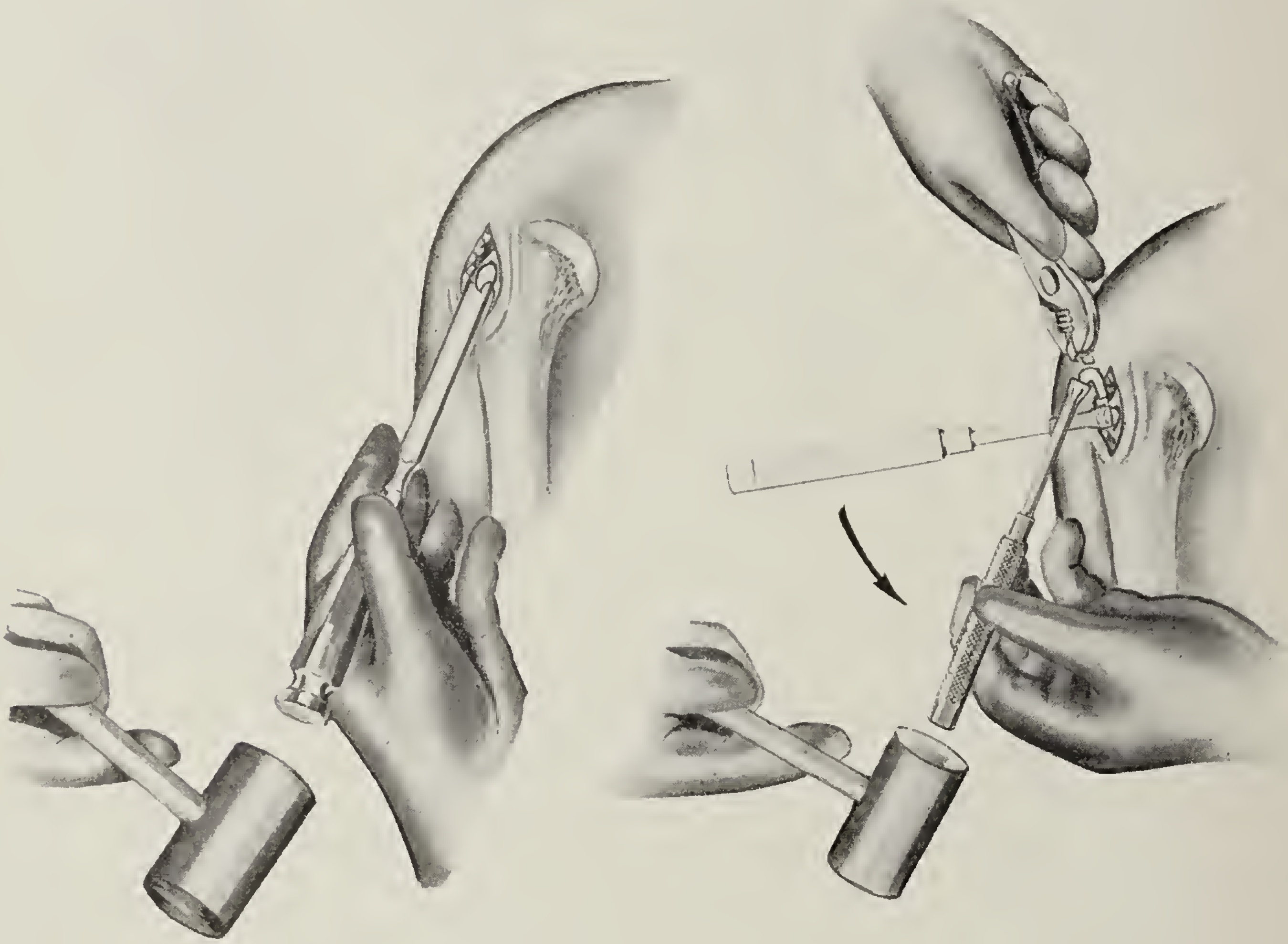


Setting the Head

(A) Do not set the head too deeply in the bone. It may be irretrievably lost.

(B) If it is to remain for several months, drive it snugly down so that the hook of the head grasps the cortex firmly and does not protrude sufficiently to irritate the soft tissues.

(C) If the pin is to be removed in a short time, and particularly is this true in children, leave the head slightly prominent so that it can be palpated beneath the skin. This greatly facilitates removal.



7

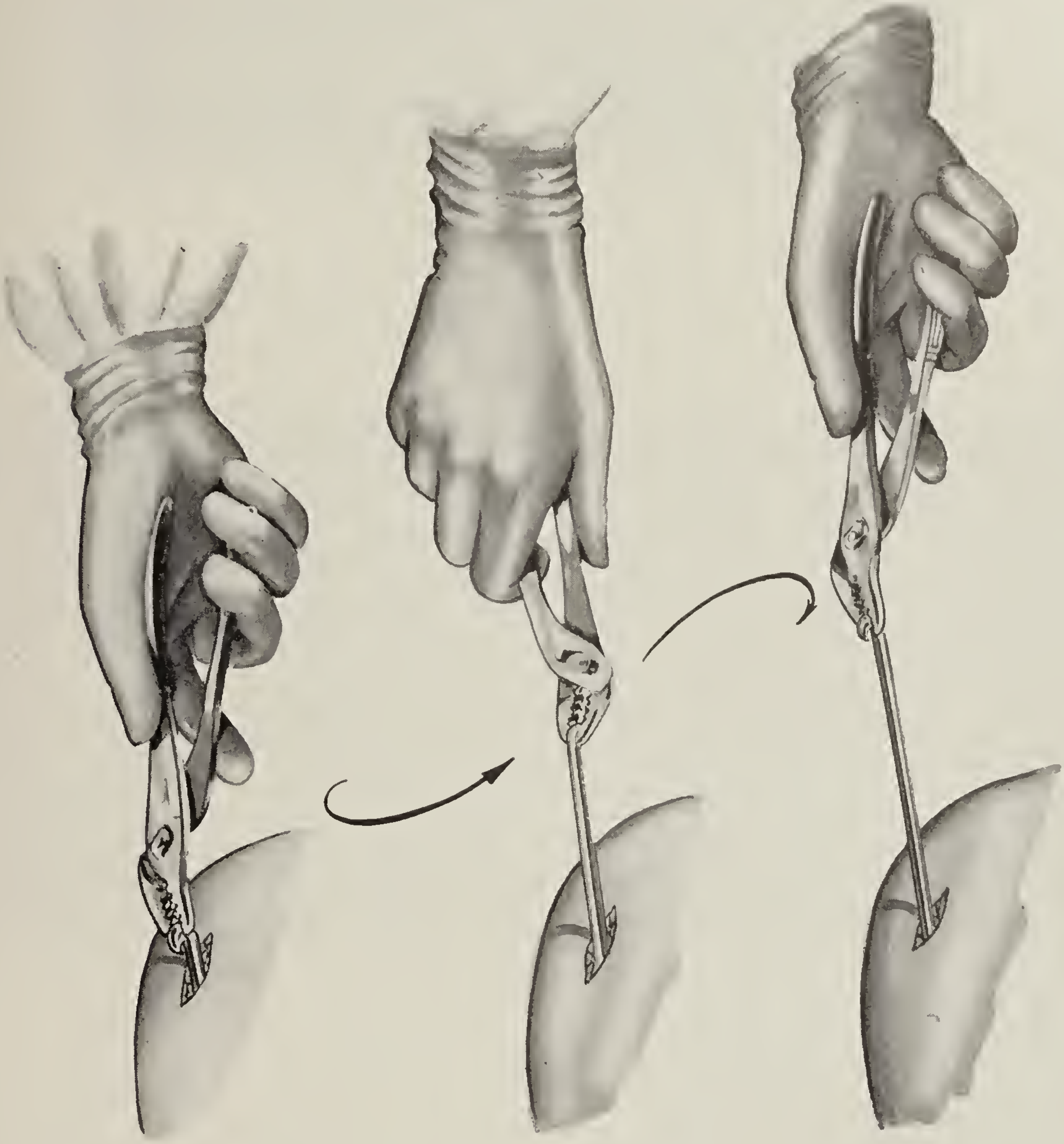
EXTRACTION

To Loosen the Head

A bone-gouging chisel may be used if a driver-extractor is not available. Slip the chisel beneath the hook of the head and tap with a mallet until the head rides sufficiently free so that it can be grasped with a pair of pliers.

With the driver-extractor, observe that it has an elliptical cup-shaped extremity which fits over the head of the pin. This can be used just as the gouging chisel. This instrument is slipped beneath the hook and tapped with a mallet until the head is freed from the bone and can be grasped with a pair of pliers.

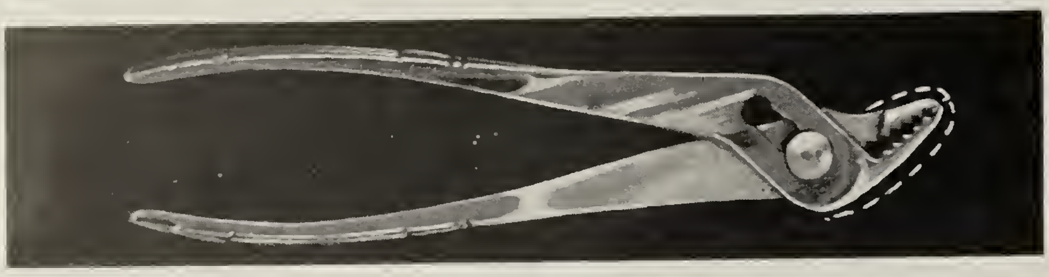
In the event that the head is buried into the bone, place the extractor at a right angle to the bone overlying the head and tap with a mallet. This makes an elliptical cut in the bone which usually frees the hook so that the instrument can be gotten beneath it for the maneuver.



Twist Out

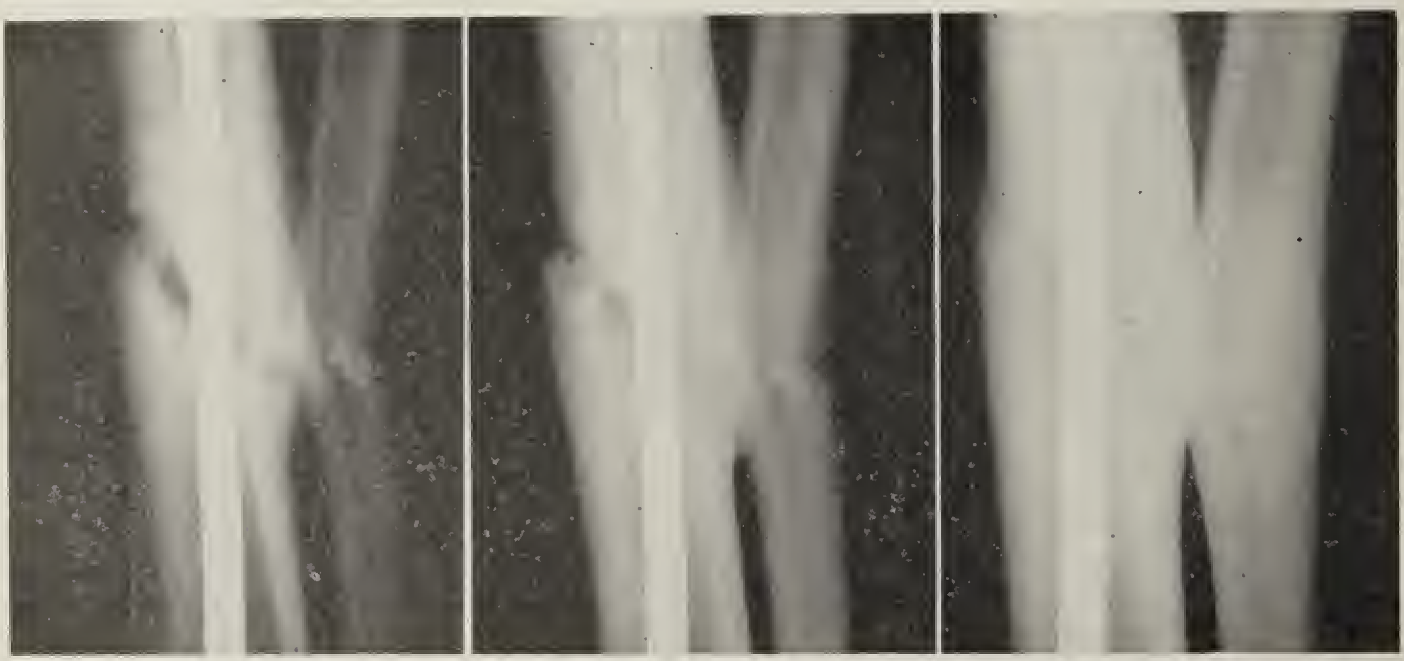
In addition to the driver-extractor, a pair of pliers is an excellent instrument for removal of the pin. Withdraw the pin by grasping it with a pair of pliers, rotating the pin back and forth on its long axis. This greatly facilitates the procedure. It is rarely difficult to remove a pin in this manner once the head has been located.

It has been found extremely difficult in many instances to remove a longitudinal rod from a bone except by withdrawing it with a twisting motion. This factor, which we cannot completely explain, is probably due to built up friction and suction within the bone. It no doubt accounts for the many difficulties that have been experienced in removing rods of irregular shape in cross section because they cannot be rotated on removal.



Bird Beak Pliers

This instrument purchased at an ordinary hardware store can easily be modified to give it long narrow jaws which can be used to an excellent advantage in removing pins. The "bird beak" can be slipped through the soft tissues in a very small stab wound to grasp the head of the pin for withdrawal.



Much too early *Too Early* *Now*

When to Remove the Pin

The pin should not be removed until it has accomplished its purpose. As long as the fracture line is visible in the x-ray, bowing may occur if the pin is removed.

In elderly people it is frequently practicable to leave the pin in permanently. It is removed in the event that it causes irritation or the head is prominent enough to block the motion of a joint.

In children, particularly if an epiphysis has been traversed, remove the pin as soon as healing will permit. In fractures near joints this can sometimes be accomplished safely within four weeks. In contradistinction to this it may be necessary to leave the pin in a femur of an adult for one year if the fracture line has not completely faded away.

In the event of non-union persistent rocking motion at the fracture site will eventually result in fracture of the pin. This will frequently occur within one year. In the event of a persistent non-union or delayed union, remove the pin, replacing it with a fresh one. This can nearly always be done as a closed procedure through a small stab wound.

At the discretion of the surgeon, it may be practicable to leave the pin permanently even in young adults. It must be remembered that corrosion of the metal is unlikely but can occur. Symptoms of bone irritation are pain, swelling, or tenderness.

8

REDUCTION OF FRACTURE

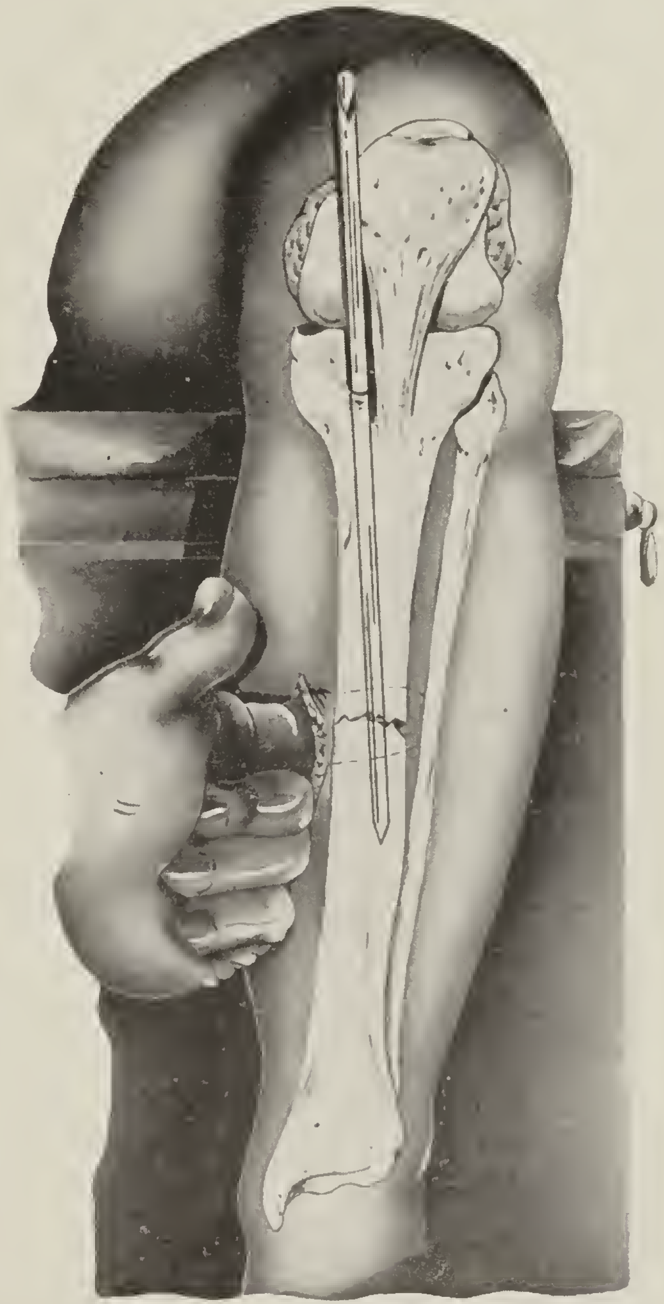
Semi-Open Reduction

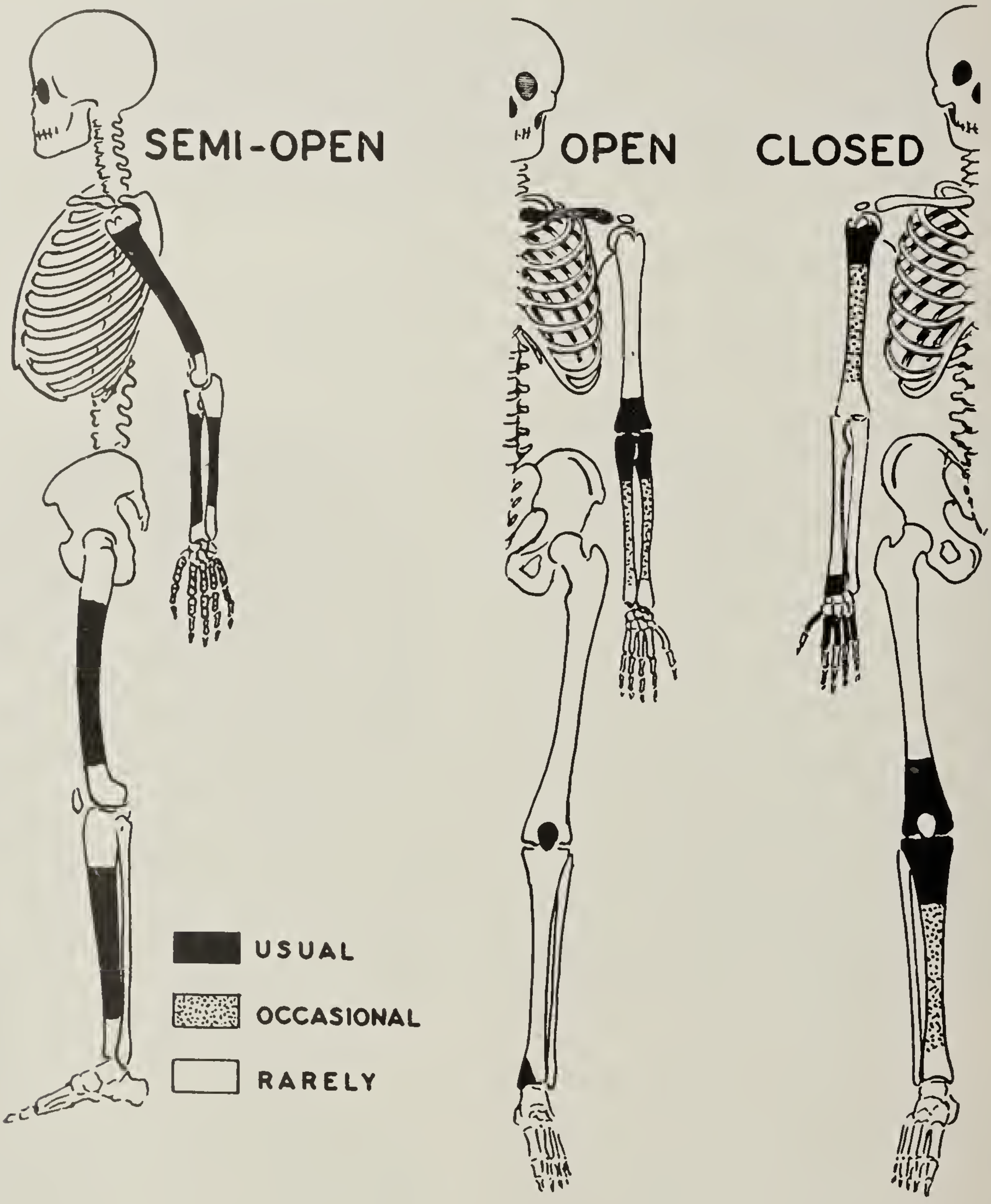
Suppose that we are dealing with a transverse fracture of the mid-shaft of the tibia. It appears that the bone can be pinned as a closed procedure, but for some uncanny reason each time the pin is driven across the fracture line it has a tendency to pass into the soft tissues instead of into the medullary cavity of the distal fragment.

To continue to repeat this procedure might result in serious harm. The surgeon feels, then, if he could have just one finger in contact with the bone at the fracture area, that he could line the bone up sufficiently so that the pin would be guided into the lower fragment without difficulty. This is exactly what he should do. By making a one-inch incision through the skin and fascia, a bluntnosed artery forceps can be plunged through the muscle into the hematoma about the fracture. The blades of the artery forceps are spread open sufficiently to evacuate the clot and to allow the operator to introduce one palpating finger. By such a procedure the trauma of the operation is not increased. The surgeon then by using this, the tip of his palpating finger as his eyes, realigns the bone, and an assistant drives the pin across the fracture line. This is what we mean by *semi-open reduction.*

Gross dissection is rarely necessary for any recent shaft fracture. The femur requires two-finger manipulation. In the humerus and tibia one finger will do the job. The forearm is more difficult and may require manipulation with a small periosteal elevator.

Semi-open reduction safeguards against nerve damage and preserves the healing potentialities of the bone



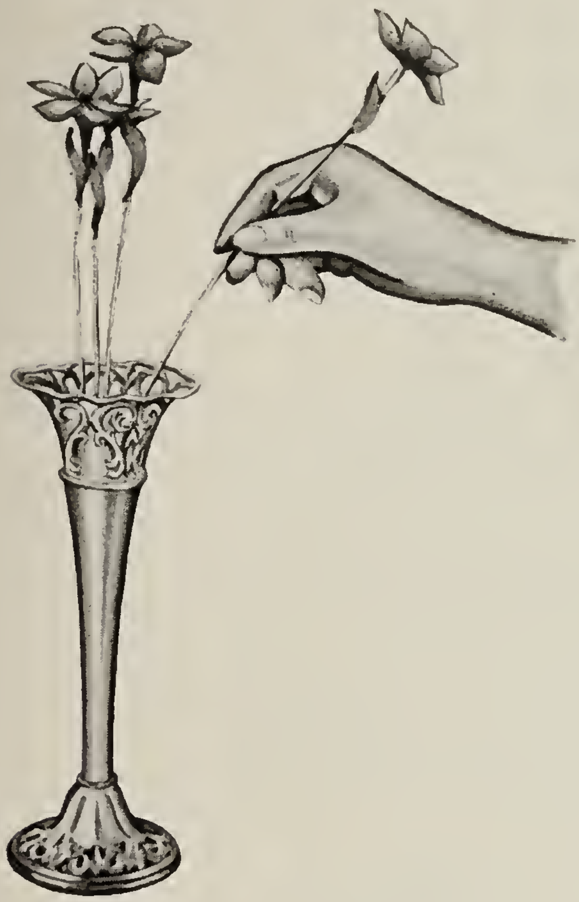


Choice of Procedure

SEMI-OPEN REDUCTION is almost routine in the shafts of all long bones with the exception of the clavicle.

OPEN REDUCTION is routinely indicated for pinning of the clavicle, the elbow region and the internal malleolus of the tibia (and of course for wiring fractures of the patella). Orthodox open reduction is rarely indicated elsewhere, and soft tissue dissection can usually be minimized. In the shafts of the bones of the forearm, it is occasionally indicated.

CLOSED REDUCTION is almost routine for the upper fourth of the shaft of the humerus, for Colles' fractures and fractures of the metacarpals. The lower end of the femur and the upper end of the tibia can usually be pinned satisfactorily without an incision.



Vase of Flowers Principle

Flowers which are entered into a vase obliquely with flexed stems tend to aright themselves within the vase due to the resiliency of the stems which exert point pressure within the vase. A resilient rod introduced obliquely into the tubular cavity of a bone tends to react in the same manner. This principle has a very broad application in medullary pinning.

9

DYNAMIC FACTORS*

The principle of medullary pin fixation differs basically from that of marrow nailing. *Nailing* suggests utilization of bulk in which a rod is impacted within the marrow cavity. Thus mass is used to fix the bone directly, while passively resisting the muscle force of the extremity.

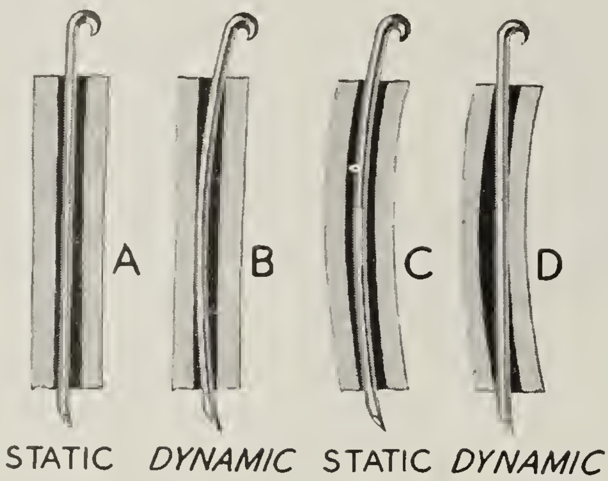
Medullary *pinning,* on the other hand, depends not upon bulk but upon its own dynamic forces and the utilization of the muscular forces of the extremity. It might be likened to the principal of ju jitsu, in which one utilizes to his own advantage the superior weight and strength of his opponent.

To limit medullary fixation to the narrow principle of the ramrod in the gun barrel is wasteful of dynamic forces. It is a rare fracture that is not acted upon in some way by the intrinsic dynamic forces of an extremity. These forces can react to defeat the surgeon or, as in ju jitsu, can be utilized to his advantage.

Medullary fixation can be directed passively to resist the intrinsic dynamic forces of an extremity or it can exert continuous dynamic forces of its own. It must be assumed that the rod to be used is of optimum temper, i. e., possessing strength, limited resiliency, and limited malleability.

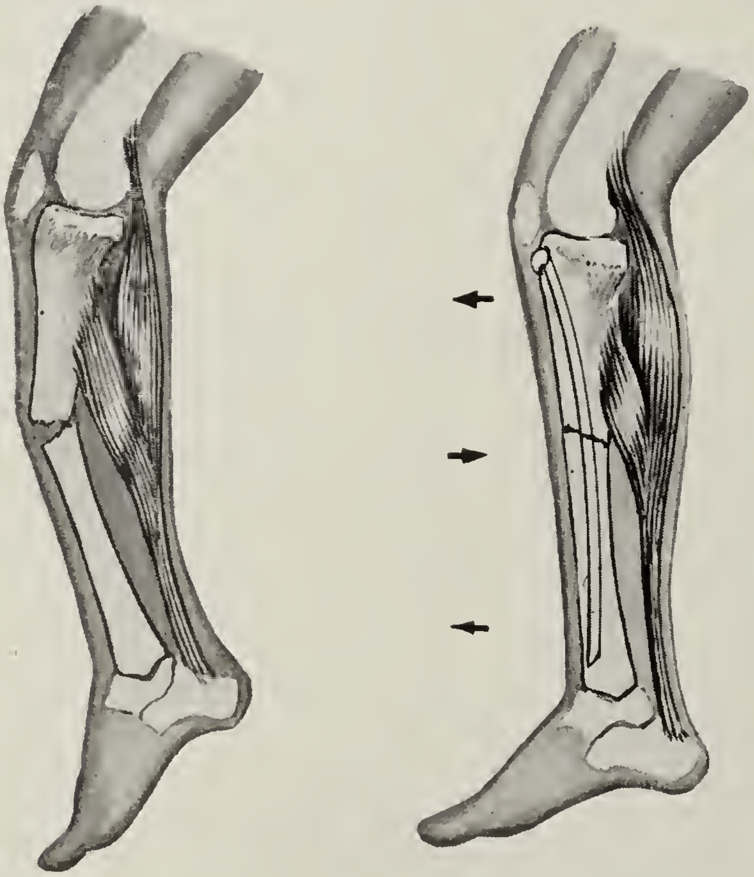
Let us now examine these dynamic factors.

Redrawn and reprinted in part from: THE AMERICAN SURGEON, *September, 1951. Vol XVII, No. 9, pp. 803-808.*



Influence of Preshaping Pin and Bone Contour on Dynamics

(A & C) Pin preshaped to contour of bone exerts no dynamic force.
(B) Curved pin in a straight bone exerts pressure at three points.
(D) Straight pin in a curved bone exerts pressure at three points.



Dynamic Forces In Tibia Pinning

Gastrocnemius and soleus muscles act as bow string tending to angulate tibial shaft anteriorally. Curved pin resists these forces at three points to limit angulation and tends to control torque.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

§

EDITORIALS

SHALL WE MAKE CALLS?

We continue to hear and read about the uselessness of calls to the home by doctors. Some estimate that only about one in ten being made is absolutely necessary, that many people call doctors when they really do not need them. It is good economy generally speaking for the patient to go to the doctor's office or to the hospital if he is very sick. But suppose someone investigates and determines how many would die if they did not go to the office or to the hospital. How are you going to know the one in ten who needs a doctor in the home? Although Americans are utilizing more medical service and doing it to better advantage than any other nation in the world, they are only holding to a standard on a par with other American standards. We can scarcely hope to teach a clientele thus indoctrinated to time their illness from ten to twelve and from two to four five days a week.

STILL WITH US

The nurse problem is still with us. Many reasons may be found for this. Our nation is utilizing more medical benefits perhaps than any other nation. Our people are more hospital minded and require more nursing. Hospital beds in our country are on the increase, yet the financial problem in operating our hospitals has not been solved. However, when we eliminate the shortages of nurses and hospital personnel we will have conquered the chief problems as they affect the public.

Dr. Howard A. Rusk, chairman of the Health Resources Advisory Committee, has some valuable suggestions along this line.

Dr. Rusk believes that medical science must be interested first and last in the individual patient, and see that the patient gets the essentials while sick in the hospital. The patient, furthermore, must be taught to help himself. And others besides the trained nurse must be taught to aid the patient in the home. He continues, with the opinion that fundamental business problems must be analyzed and studied for application in the operation of our hospitals. In carrying medical service to all the people, a spirit of altruism, of Bible ethics must be kept in mind. Every doctor must share in the responsibility of improving our nursing situation. If it shall continue to be the right arm of the profession, there must still be preserved a kinship of ideals.

Last call for Tennessee Valley Medical Assembly! Meeting at the Read House in Chattanooga, Tenn., September 28 and 29.

In this issue we call your attention to the announcement (in ad section in back of journal) of the Henry G. Hill Clinic for lease. The late Dr. Hill, an orthopedist of outstanding ability who shared in building Memphis' medical center, in the heart of which his hospital clinic is located, leaves an unmistakable heritage and standard in his specialty.

S. M. A.

The Southern Medical Association is the second largest of the old and established medical meetings in the nation. It has always been the very best for scientific information. The fellowship in this association is unusually good. It meets October 26-29 for four days in the historical Southern city of Atlanta.

In addition to an important medical program you will enjoy the atmosphere of a city blessed with a fine medical school, fine hospitals, and a wonderful spirit of fellowship. If you have not made your plans to attend, do so now.

NEW X-RAY SERVICE

We are glad to welcome into our advertising fold Al Vogel X-Ray Company of Memphis, Tennessee. This new company offers a complete line of Keleket X-Ray apparatus, accessories, films and supplies, along with physio-therapy service, especially available to physicians in Mississippi.

NEWS AND COMMENT

DR. ELMER HENDERSON

Dr. Elmer L. Henderson, Louisville, died July 30. Dr. Henderson has been one of this country's greatest, if not its greatest, medical statesmen and has contributed much toward the advancement of organized medicine and against the socialization of medicine.

Dr. Henderson has been president of his local and state societies, of the Southern Medical Association, of the American Medical Association, and of the World Medical Association. He was a member of the board of trustees of the American Medical Association prior to 1950 when he was elected president-elect of the American Medical Association. He was president of the American Medical Education Foundation, and although a life long Democrat was chairman of the National Professional Committee for Eisenhower.

Dr. Henderson is survived by his widow (87 Valley Road, Louisville), a married son and a married daughter.

ANNOUNCEMENT

Dr. Lynn D. Abernethy has moved his offices to 653 North State Street, Jackson, Mississippi.

Dr. Curtis W. Caine announces a new address, 4332 Manhattan Road, Jackson, Mississippi, effective September 1.

Woman's Auxiliary

SMA CALENDAR INVITING

Mrs. Richard F. Stover, vivacious and almost ubiquitous president of the Auxiliary to the Southern Medical Association, announces a streamlined calendar for the Atlanta meeting, designed to attract and hold more doctors' wives for the three-day session.

First, there is an exhibit of medical and surgical collectanea from all the Southern states—old instruments, papers, photographs, biographies; scrapbooks and evidences of program activity the past year. This theme will be climaxed by a Research and Romance Medicine tea, Mrs. Thomas E. Strain, chairman, presiding, at Rich's Department Store.

Then there will be several guest speakers, most notable of whom will be Dr. John McSween of Clinton, South Carolina, Doctor's Day Luncheon speaker, and Dr. Frank G. Slaughter, novelist and surgeon of Jacksonville, Fla., who will be the speaker at the tea.

Mrs. Stanley A. Hill of Corinth, president-elect, will be installed as president at the final session..

Auxiliary headquarters are at the Henry Grady Hotel in Atlanta.

It is estimated, Mississippi has some 23 to 25,000 alcoholics and problem drinkers. Do you know one? What is the effect on the family of an alcoholic?

§

Management of Pelvic Endometriosis

Continued from page 109

complete, then it should usually be radical.

6. Radium and roentgen-ray therapy have only a limited place in the treatment of pelvic endometriosis.

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DEATHS

DR. WILLIAM NEVILLE

Services for Dr. William Neville, 73, president of First National Bank and of the McColgan Building and Loan Association, of McComb, were held from his residence July 29. Dr. R. E. Craig, pastor of J. J. White Memorial Presbyterian Church, of which Dr. Neville was a member of the board of elders, officiated. Burial was in Hollywood Cemetery.

He was serving as a member of the Mississippi Forestry Commission and the State Board of Park Supervisors.

Dr. Neville began the practice of medicine in McComb City Hospital. He was honored in 1951 at the Tulane University on the 50th anniversary of his graduation from Tulane School of Medicine. On retirement from active practice of medicine in 1923 he organized the McColgan Building and Loan Association, and the Morgan Plan Company, Inc., in 1929, serving as head of both.

He and Mrs. Neville, the former Birdie Harrell, celebrated their 50th wedding anniversary last February. Dr. Neville was a nephew of the late William McColgan and Hugh McColgan, affectionately and prominently identified with the city of McComb in its beginnings.

In addition to his civic interest he was an ardent supporter of all kinds of sports connected with the city school and was known for his philanthropy, especially honored as founder of the McComb Community Christmas Tree, a method whereby underprivileged children in McComb and area were not forgotten at Christmas time.

He leaves his wife; a son Wm. Neville, Jr.; daughters, Mrs. John H. White and Miss Hazel Neville, all of McComb.

DR. IRA SEALE

Dr. Ira B. Seale of Holly Springs died August 19 at the Mississippi Nursing Home in Jackson following a long illness. The body was returned to Holly Springs for services and burial.

He was born in Pontotoc, the son of Mr. and Mrs. W. H. Seale. He attended the old Pontotoc Male Academy, Mississippi College, and received his medical degree from Memphis Hospital Medical College. He interned at a Vicksburg hospital.

Dr. Seale came to Holly Springs in the horse and buggy days, immediately following his graduation from old Memphis Hospital Medical College. Soon after his arrival in 1910, he joined a small Baptist church and despite the long, exhausting hours of the medical profession, he found time to devote to his church. He served as chairman of the building committee when the little congregation made plans for what is today a $105,000 edifice, and for 35 years he was chairman of the board of deacons. When he resigned because of his health, fellow deacons surprised him with an engraved loving cup and when he had to give up the Men's Sunday School class he had taught for 13 years, the class was named the "Dr. Seale Class." In 1949 he was elected the "most valuable layman" in the Baptist church in Mississippi.

The beloved physician was a fellow of the University of Tennessee, and had done postgraduate work at Illinois Postgraduate School in Chicago and at Tulane. He rendered valuable service to the State Board of Health, was the first president of the North Mississippi Medical Society, district surgeon for the I. C. Railway Company, was past-president of the Rotary Club, which he was instrumental in founding, member of the Board of Trustees of Baptist Memorial Hospital for 25 years,, member of the Board of Trustees of Blue Mountain College for 18 years, and was on the Executive Committee Baptist Brotherhood of the South.

Dr. Seale served as president of the North Mississippi Hospital staff from 1946 to 1952. Upon his resignation in January, 1952, the hospital was presented a picture of him by Dr. V. B. Philpot, superintendent-surgeon, to be hung on the walls of the institution as a memorial to the great work done by him. In May 1952, a fountain for the church was dedicated to Dr. Seale by Sidney Hurdle.

Many of his patients can quote the Bible verses they have found written on their prescriptions when they desperately needed balm for their spiritual ills, too. He was a living product formed from such sterling ingredients as a well-trained first-rate mind, a deep religious conviction and a generous portion of genial friendliness.

He leaves his wife, Mrs. Elberta Pittman Seale of Holly Springs; one son, Dr. James Lawrence Seale of Memphis; three daughters, Mrs. Horace Brown, wife of Dr. Horace Brown, Dean of Business School at the University of Oklahoma; Mrs. Webb Overstreet, whose husband is a lawyer in Jackson; and Mrs. Arthur Chapman, wife of a civil engineer, of Cleveland, Ohio; three sisters, Mrs. J. A. Donaldson of Holly Springs, Mrs. Will Donaldson of Memphis, and Mrs. Ed Winston of Pontotoc; and ten grandchildren.

DR. J. M. CAMPBELL

Dr. James M. Campbell, 45, died from a heart attack at his residence in Alexandria, La. He had not been ill prior to the fatal attack. He is a son-in-law of Dr. and Mrs. W. E. Box of Newton, being the husband of the former Miss Lucille Box.

A native of Cleveland, Tenn., Dr. Campbell was the son of C. J. Campbell of Daytona Beach Fla.; and the late Mrs. Campbell. He was a member of the Presbyterian Church. He was a graduate of the Medical Department of the University of Tennessee, Memphis, and began his career in CCC camp work, and for a time was located at the camp near Lawrence. He served for a period of time with the State Board of Health in Mississippi, followed by a few years of private practice. He then was appointed on the staff of the veterans hospital in Alexandria, La., and was called back in service with the Army the latter part of June. He was in the process of being located at Ft. Smith, Ark., as a Lieutenant Colonel, when struck by death, having just completed his training period.

The funeral was held at the Hixon Funeral Home in Alexandria on August 7 and the body was brought to Newton.

Besides his wife, Dr. Campbell leaves a daughter, Jane Ann Campbell; his father; a sister, Mrs. Ellen Davis of Cleveland, Tenn.; and a number of other relatives.

Thanks to radio and television, the beer people boast of two and one-fourth billion dollars of beer sales through *grocery* stores, and aim to tripple that record.

Alcoholics, according to recent estimates are increasing at the rate of 50,000 or more a year. There are now from 4 to 7 million alcoholics and problem drinkers in this nation.

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PROGRAM

Monday morning:

Philip Thorek, M.D., Chicago, Ill., "Acute Abdomen"
Richard W. TeLinde, M.D., Baltimore, Md., "Carcinoma of the Cervix"
Paul D. White, M.D., Boston, Mass., "Hypertensive Heart Disease a Generation Ago and Now"
Charles W. Mayo, M.D., Rochester, Minn., Alex Stewart Memorial Lecture, "Colon Surgery"

Monday afternoon:

Paul D. White, M.D., Boston, Mass., "Notes on Coronary Heart Diseases"
Robert B. Lawson, M.D., Winston-Salem, N. C., "To Treat, or Not to Treat"
Richard W. TeLinde, M.D., Baltimore, Md., "Pelvic Endometriosis"
John R. Heller, M.D., Bethesda, Md., "Pathogenesis of Carcinoma"
Banquet Monday night, Mr. Leo Brown, Chicago, Ill., "Medicine's Golden Opportunity"

Tuesday morning:

John R. Youmans, M.D., Nashville, Tennessee, "Anemia and Nutrition"
Richard B. Cattell, M.D., Boston, Mass., "Advances in Pancreatic Surgery"
H. Earle Conwell, M.D., Birmingham, Ala., "Some Do's and Don't's in Fracture Treatment"
George Crile, Jr., M.D., Cleveland, Ohio, "Diseases of the Thyroid Gland"

Tuesday afternoon:

Richard B. Cattell, M.D., Boston, Mass., "Surgical Treatment of Gastric and Duodenal Ulcers"
V. P. Sydenstricker, M.D., Augusta, Ga., Subject to be announced
Paul Holbrook, M.D., Tucson, Ariz., "Treatment of Rheumatoid Arthritis"
George Crile, Jr., M.D., Cleveland, Ohio, "Bleeding Esophageal Varices"

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Early Diagnosis of Rheumatic Fever*

Arild E. Hansen, M.D., Ph.D.†
Galveston, Texas

Recently a five-year-old girl was referred for study because of a possible rheumatic infection. She seemed quite well until early in December, 1952, when she had a slight cold, following which she developed a severe cough with temperature elevations up to 105°. This episode subsided after one and a half weeks so she returned to school, but remained only three days. She again developed fever and cough and a sulfa compound was given, but this was discontinued because of nausea and vomiting. It was during this second episode that she complained of intermittent pain in her legs. After about two weeks her physician noted the presence of a murmur. Physical examination, five weeks after the onset of the second episode, revealed a pleasant, friendly, rather small, nervous child. Her heart rate rapid and a soft blowing systolic murmur elicited, otherwise no outstanding findings were present. The sedimentation rate was 28mm. in one hour. Electrocardiographic findings were normal and the heart on x-ray was normal for size, shape and position. Blood cultures and agglutination tests were negative. Although all the early symptomatology was not completely typical, the development of a heart murmur, mild tachycardia and elevation of the sedimentation rate seemed to justify the tentative diagnosis of mild rheumatic infection.

Another young girl going on five years of age, also was referred with a diagnosis of possible rheumatic infection because of fever of unknown origin. One-half year previously this child had furuncles which were treated with penicillin. She had been healthy and happy until her parents noticed, when on vacation, that she became tired easily, was cranky, and complained of headaches. It was noted that she was running a temperature which is said to have gone to 102° axillary. She was seen by a physician who recommended bed rest because of the possibility of a rheumatic infection. She continued to run a temperature between 98° and 99.8° axillary. Physical examination revealed an alert, lovely little girl who was very cooperative, happy and appeared well adjusted. Auscultation of the heart revealed no evidence of murmurs. Laboratory studies including blood cultures and agglutinations were not significant. The sedimentation rate was 15 mm. in one hour. Electrocardiogram revealed no abnormality. It was felt that it was of prime importance to determine whether or not she actually was running a fever. Rectal temperatures were taken and there was some evidence that the temperature would rise to 100°. It was then decided to obtain temperatures while asleep and also to do the same for the pulse rate.It is rather interesting that while sleeping there was no evidence of fever, also the sleeping pulse rate was slow. Features against making the diagnosis of rheumatic fever were: no elevation of temperature; no evidence of cardiac involvement; sedimentation rate within normal limits.

A few months ago still another five-year-old child was referred for study with the diagnosis of possible rheumatic fever. She had a low-grade fever, complained of pain in the legs with some weakness and loss of appetite. Physical examination revealed no unusual findings except listlessness, slight pallor and a soft systolic murmur at the apex. The sedimentation rate was 41mm. in one hour. In this instance, because of the apparent strong likelihood of a rheumatic infection, it had been decided to use cortisone. Because of a leukocyte count of 4,500 the child was referred for further study. Bone marrow aspiration revealed a picture typical of lymphatic leukemia. Had cortisone treatment actually been instituted there is a possibility that symptomatic relief would have led to confirmation of the diagnosis of acute rheumatic fever.

Many examples could be cited regarding difficulty in diagnosis, nevertheless, it is well recognized that one of the most important problems in rheumatic fever concerns early diagnosis. The practicing physician is the qualified person first to see these patients and he is the only one equipped to make the diagnosis, yet, at times, he may have difficulty in evaluating the situation. There is no necessity to rush in making the diagnosis and many times it is of distinct advantage to delay decision. If the fact is explained to the parents that sometimes it is impossible to arrive at a definitive diagnosis until later in the course of the disease, it may help matters considerably. The parents then are willing to bear with the physician when it is stated that the diagnosis of rheumatic fever is tentative. Fortunately, in most instances when only a tentative diagnosis of rheumatic fever can be made, the outlook for a favorable outcome is good, providing that the basic features of treatment are followed.

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†Department of Pediatrics, University of Texas Medical Branch, Galveston, Texas.

*Presented at the meeting of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 10-13, 1953.

It has been emphasized time and again that no laboratory test or series of tests allows one to make the diagnosis of rheumatic fever without considering the symptomatology in detail. In a study carried on some years ago, it was found that of the patients with rheumatic fever who were referred by practicing physicians to a university hospital, the referring diagnosis and the final diagnosis agreed in about 75 per cent of the cases. Where difficulty in diagnosis was encountered, the problem was a real one and varied with the presenting symptoms. Abdominal pain was the predominating symptom in 24 per cent and in about 23 per cent the symptoms suggested chorea minor. In 18 per cent there were evidences of acute, severe febrile disease and in about 14 per cent symptoms were suggestive of a low-grade infection of some type. In 12 per cent pain in the extremities was accompanied with marked symptoms suggestive of osteomyelitis or poliomyelitis. In the other 9 per cent of the cases skin manifestations or evidences of kidney disease were the confusing features. These were about equally distributed. The experiences of many observers indicate that there are few diseases which are more difficult to diagnose correctly and at the same time, there are few diseases in which the manifestations are so typical as to make diagnosis relatively easy.

It never seems to be out of place to recall the varied symptomatology of rheumatic fever. It is well-known that a patient may have one type of manifestation at one time, and later have another type quite different in character. For the sake of review we will list the chief manifestations of the disease[2] and then indicate the likelihood of its occurrence at some time or other during the rheumatic career of the individual.

MANIFESTATIONS

PAIN AS A SYMPTOM

Pain in extremities: Polyarthritis is present at the onset in 25 per cent of the cases but occurs in 66 percent of the patients at some time or other. When joint pain is associated with tenderness, swelling and redness, diagnosis is made quite readily especially when migratory in nature. Mild arthritis or myositis is found at the onset in about 25 per cent of the patients and at sometime during the course of the disease in about 66 per cent. When mild or vague pains occur in the region of the joint they are apt to be of rheumatic origin. On awaking in the morning the child with a rheumatic infection may have a limp with the pain, but these symptoms tend to disappear as the day wears on. In contrast, the non-rheumatic pains which are associated with fatigue or postural derangements tend to occur in somewhat younger children and the pain is apt to be located between the joints rather than in the joint itself. The child with fatigue pains often complains considerably shortly after going to bed at night and is apt to call his mother; he obtains relief when his legs are rubbed.

Abdominal pain: Occasionally the most pronounced early symptom of rheumatic fever is pain in the abdomen. If this is accompanied by pain in the extremities, the diagnosis is not difficult, however, if it is the outstanding symptom, appendicitis is apt to be considered rather than rheumatic infection. It is not uncommon in a heart hospital for children to find a large number of the inmates with appendiceal scars. About one-eighth of the children with rheumatic fever at some time will have abdominal pain as an outstanding complaint. Hence, when the child of rheumatic age group (5-15 years) suffers pain in the abdomen it is well to give thought to the possibility that it may be rheumatic in origin.

Pain in chest: This symptom occasionally occurs as a marked symptom in rheumatic infection but usually signs of carditis make for ready diagnosis.

CARDITIS

It is difficult to ascertain the number of children with rheumatic fever who have evidence of heart involvement early in the attack. It appears, however, that, if studied carefully, that about 50 per cent will show cardiac signs of the disease. Frequently, the manifestations of cardiac involvement are so inconspicuous as to be overlooked. At any rate, there is no substitute for careful attention to the heart in detecting evidence of a rheumatic fever. In the neighborhood of 80 per cent of patients with rheumatic fever at some time or other during their rheumatic career show evidences of heart involvement. The development of murmurs, alterations in rhythm (such as a "tick-tack" or "gallop" rhythm), changes in the magnitude of the heart tones, development of friction sounds and changes in the size of the heart are important in the evaluation of cardiac involvement. Only a very small portion of the patients with early rheumatic fever show evidence of cardiac decompensation. However, if these same patients are followed over a period of years, possibly 25 to 30 per cent will have cardiac decompensation at some time or other.

CHOREA MINOR

Perhaps 15-25 per cent of children have the onset of rheumatic fever characterized by chorea. Recurrences are such that about 40-50 per cent of patients will develop signs of chorea at some time or other. Usually the diagnosis is made readily when the classical features of dystonia, muscle weakness, and emotional change are present. It is only on careful study, however, that the diagnosis can be made early before the features of fidgetiness, clumsiness and behavior disturbances are evident. Finer tests for evidence of muscle control should be part of the routine examination of every physician.

SUBCUTANEOUS FIBROID NODULES

Only a small portion (probably no more than one-third per cent) of the children with rheumatic fever has this important finding in the early stage of the first attack. It is known that at sometime perhaps 20 per cent of the patients with rheumatic fever will have these peculiar "grain of seed" appear on the tendons over the wrist, elbows, scapula, spinous processes, knees, ankles. or over the occiput. The greater the intensity with which these nodules are sought, the greater seems to be the incidence. They are apt to be found in the more seriously involved cases. Of all the evidences of rheumatic fever, they become more nearly being pathogenic than any other manifestation of rheumatic fever.

ERYTHEMA RHEUMATICA

The evanescent erythematous eruptions occur only in a small percentage of the patients (one-third per cent) in the first attack, although it is stated that about 12 per cent of patients at some time or other have these eruptions. The most typical rash is that of an erythema with an expanding irregular outline with central clearing. These eruptions are so fleeting that the physician may not observe them. However, they can be very valuable in diagnosis.

KIDNEY MANIFESTATIONS

Occasionally rheumatic fever has an onset which is similar to acute glomerulonephritis. This is said to occur in about 1 per cent of the patients. Hartman and Bland,[3] in a study comprising 117 patients with nephritis, stated that 4.2 per cent of the patients had rheumatic fever. In 188 cases with rheumatic fever there were signs of glomerulonephritis in 5 per cent.

CONSTITUTIONAL SYMPTOMS

LeBus and Panos[4] found that 90 per cent of their patients with rheumatic fever at some time or other had symptoms indicative of a constitutional disorder. In 10 per cent of the patients the only manifestations of rheumatic fever consisted of some of the following: anorexia, weight loss (or failure to gain), pallor, epistaxis, fatigability, upper respiratory infections, listlessness, fever, nervousness, swelling. In about one-fifth of their children, epistaxis was a prominent symptom.

DIAGNOSIS

LABORATORY FEATURES HELPFUL IN DIAGNOSIS

Fortunately the most valuable aids in the diagnosis of rheumatic fever are the relatively simple laboratory procedures: hemoglobin, erythrocyte, leukocyte and the differential white cell count. The most singularly valuable test is the sedimentation rate of the blood cells. Not only is this helpful in diagnosis, but it is useful in following the course of the disease as regards rheumatic activity. The P-R interval prolongation is the most useful electrocardiographic guide. Fluoroscopic and x-ray studies of the heart may be useful in detecting evidences of enlargement. A decrease in the vital capacity gives one a valuable index of impending heart failure. There is evidence to indicate that the antistreptolysin titer may be useful in diagnosis inasmuch as the titer is higher in rheumatic fever following a streptococcal throat infection than in those patients who do not develop rheumatic fever, but have suffered a streptococcal throat infection. A large variety of immunologic reactions has been studied but none of the procedures have proved practical for every day practice in the physician's office. Some observers[5] believe that determination of the mucoprotein levels is helpful in following the course of the disease.

THERAPEUTIC TESTS

Time honored is the interpretation of clinical response as an aid in diagnosis. The following points may be mentioned in regard to the rheumatic fever problem.

Salicylates: The prompt fall in temperature and relief of pain often are helpful in the diagnosis. Inasmuch as coal tar products have definite analgesic qualities, symptomatic relief may be forthcoming, hence, one should learn to give limited reliability to salicylates as a specific diagnostic tool.

Sulfonamides: One of the first discoveries made with sulfa compounds was not only their failure as a therapeutic agent in rheumatic infection, but an accentuation of the symptoms. This observation quite often assisted one in suspecting rheumatic fever as the cause of the disorder.

Antibiotics: Failure to respond to antibiotic administration also may be an early clue to the diagnosis of rheumatic fever.

ACTH and Cortisone: The dramatic effect of ACTH and cortisone in relieving the symptoms of acute rheumatic fever suggests that these hormones at times, may be of value for arriving at the diagnosis of rheumatic fever. On several occasions we have found this to be true.[2] It should be emphasized, however, that symptomatic relief may occur in leukemia, lupus erythermatosis and other disorders which are apt to be confused with rheumatic fever diagnostically. Another danger is that the indiscriminate use of these hormones may alter the body's natural immune reactions to a bacterial infection which actually may be responsible for the symptomatology in a given case. It is fortunate that there is little real danger in the cautious use of these hormones and no permanent damage seems to result from their use.

DIFFERENTIAL DIAGNOSIS

Disorders most likely to be confused in the diagnosis of early rheumatic fever are given in relation to the predominant manifestation: pain in abdomen—appendicitis; pain and fever—osteomyelitis, poliomyelitis, rheumatoid arthritis, meningococcemia, leukemia, lymphogranulomatosis; nervousness (chorea minor), emotional disorder, hyperthyroidism; fulminating infection — septicemia, bacterial endocarditis, pneumonia; low-grade infections — sinusitis, infected tonsils and adenoids, brucellosis.

DURATION OF DISEASE

Even though the symptoms of acute rheumatic fever may subside quite readily, one must bear in mind continuously that the period of rheumatic activity usually is prolonged[5]. It is estimated that the period of rheumatic activity in one-fifth of the cases continues for over a year and only one-third of the attacks are less than four months in duration. It is not known exactly to what extent early diagnosis shortens the duration of an attack. Also, it is yet to be determined to what extent the administration of salicylates, ACTH or cortisone affect the duration. It is felt that early treatment, which is possible only after early diagnosis, of course, favors the ultimate outcome of the disease.

MANAGEMENT OF THE DISEASE

Early diagnosis fails to be of real value unless proper treatment is carried out. The plan of treatment should be outlined to include supervision for periods of months or even years and it is the responsibility of the practicing physician to aquaint the child and his parents with the nature of the disease. Nowadays it is possible for one to convey a ray of optimism if both the physician and patient follow well-recognized and prescribed procedures. The following outline may be of value for purposes of refreshing oneself regarding the treatment of rheumatic fever.

Acute phase —*pain and fever* — bed rest, salicylates or adrenocortical hormones, good diet.
cardiac failure - strict bed rest, oxygen, sedation, good diet (low sodium), diuretics, digitalis and cortisone or ACTH advisedly.
chorea minor — bed rest, quiet, protect from injury, good diet, sedation.

Subsidiary phase - nutritious diet, diversional therapy, physical therapy, schedule of graduated activity, educational program, psychologic conditioning to prevent emotional disorders, removal of foci of infection, if indicated, employing antibiotic agents.

Quiescent phase: prevention of recurrences (likely in two-thirds to three-fourths of afflicted children). Continuous administration of sulfonamides or a program of antibiotic administration, the most useful of which is penicillin.

CONCLUSIONS

The ultimate or ideal objective in regard to the rheumatic fever problem in children is to prevent the initial attack of the disease by administration of penicillin at the time of the acute streptococcal throat infection which antedates the onset of the rheumatic symptoms by one to three weeks. In children it is not an easy matter to make the clinical diagnosis of "strep throat" without bacteriologic confirmation. If progress is to be made in this respect, it will be necessary simplify and expedite greatly the results of the cultures from throat infections in children. Some day this may come to pass. The "hit or miss" approach to the problem as now practiced by a number of practitioners of giving penicillin injections rather promiscuously may be doing some good in the prevention of the subsequent attack of rheumatic fever, but control data are not available. Experience in Army camps[7] has disclosed that use of penicillin reduces greatly the incidence of attacks of rheumatic fever following an hemolytic streptococcal throat infection.

The morbidity and mortality of rheumatic fever have been reduced greatly in recent decades. It is apparent that still further reductions may be accomplished if the physician is able to make the diagnosis early and to carry out a prolonged program of management.

The real accomplishment will result when scientific investigations are able to ascertain the fundamental nature of the disorder and to discover a truly efficient therapeutic agent.

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47th ANNUAL MEETING
ATLANTA
1953 OCTOBER 1953
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SOUTHERN MEDICAL ASSOCIATION

ATLANTA, OCT. 26·27·28·29

For the fourth time in its history, the Southern Medical Association will meet in Atlanta, Georgia.

Physicians of the South are urged to mark the dates of this meeting on their calendars and make every effort to attend this outstanding meeting of the year.

In addition to the forty-seven half-day section meetings covering every aspect of medical practice, there will be a general session, conjoint meetings, many social activities, and fraternal and alumni gatherings—a complete general medical meeting, with all scientific activities under one roof, the Atlanta Municipal Auditorium.

Hotel accommodations for this meeting may be secured by writing: Housing Bureau, Southern Medical Association, 801 Rhodes-Haverty Building, Atlanta, Georgia, giving hotel preference, type of accommodations desired, date and hour of arrival and departure, name and address.

While membership in the Association is not a requirement for attendance at the annual meeting, it affords many advantages, among which is the *Southern Medical Journal*, one of the leading medical publications of today. Membership dues including the Journal are only $10.00 per year. There is no registration fee at the annual meeting.

Members of state and county medical societies eligible for membership are invited to become members of the Association and attend the Atlanta Meeting, which promises to be one of the most successful meetings ever held by the Southern Medical Association.

SOUTHERN MEDICAL ASSOCIATION
Empire Building
Birmingham, Alabama

Another Method of Reducing Portal Hypertension

DR. ROBERT H. BRUMFIELD
McComb, Miss.

THE MECHANICS and pathology of portal hypertension and the rational of its surgical treatment has been so thoroughly described by Blakemore, Lord, Wangensteen, Rosamond and others that I shall not elaborate on the subject except to pay tribute to the pioneers in this work. Certainly, I could add nothing to the writings of these gentlemen, and just as certainly no man can detract from this monumental work.

Then, you may ask, why do I presume to suggest another method? My answer, simply, is this: Having had some success and much failure in direct porto-caval anastomosis and no success at all in spleno-renal shunt, I came to the conclusion that to use an operation of this magnitude in patients so debilitated by the disease that they could hardly stand to get a haircut and shave, was analogous to using a shotgun to kill a mosquito, especially since palliation of the end result of portal hypertension, (hemorrhage) was all one could hope to achieve. I, therefore, abandoned all attempts at relief except balloon tamponage and blood transfusions until in a review of the basic sciences I came across Paschal's Law of Fluid Dynamics. Of course, I had learned this law in high school physics but it did not impress me as being important then. However, the more I thought about pressures in liquids being equal and in all directions I recalled that in many patients with portal hypertension that I had operated on, I had seen many veins in the mesentery almost as large as my finger. I therefore began to study the feasibility of anastomosing one of these veins tributary to the portal system to the common iliac vein of the vena cava, although I knew previous attempts to get a large enough opening and maintain it had failed. If anticoagulants were used the patients bled to death, and if they were not used, thrombosis and likely embolism were inevitable.

I designed what I call a capital "H" tube and a plumber friend of mine made the first two I used, but since then the Austenal Company of New York has made them for me out of vitallium. To date, I have used this tube in three patients with advanced hepatic cirrhosis who were having frequent and severe varix hemorrhage in the gastro-intestinal tract. All patients survived the operation and none had recurrence of bleeding or ascites but all patients finally died of hepatic failure. This encouraged me to continue my puny efforts.

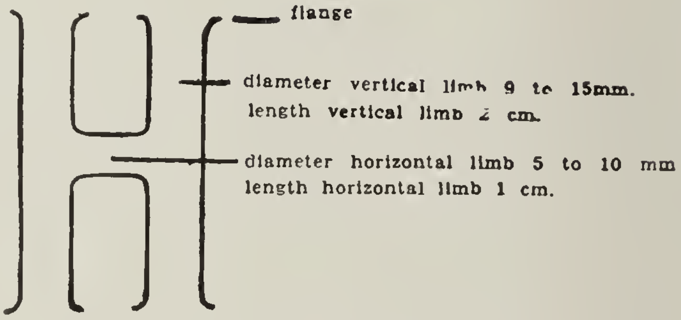
flange
diameter vertical limb 9 to 15mm.
length vertical limb 2 cm.
diameter horizontal limb 5 to 10 mm
length horizontal limb 1 cm.

Figure 1. The capital H tube of vitallium. Made by Austenal Company, New York.

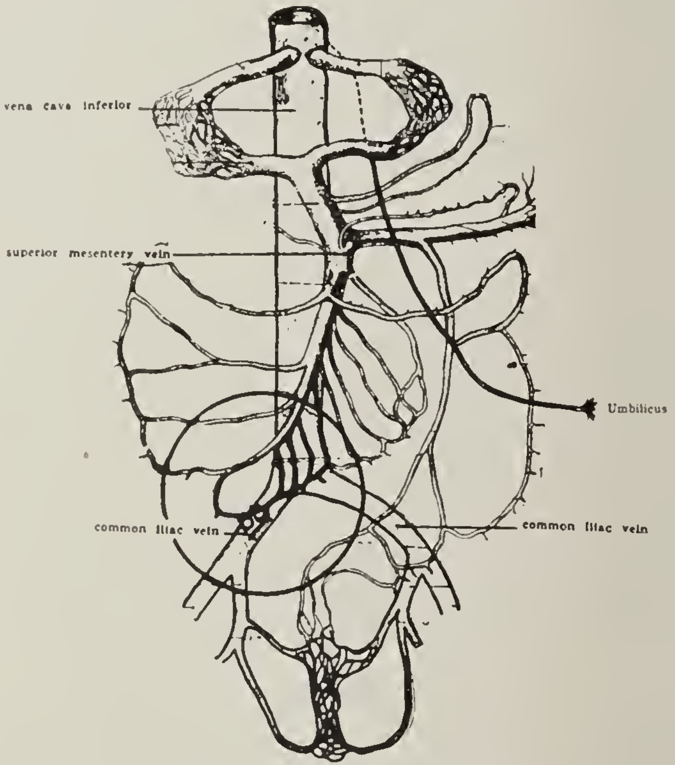

Figure 2. Portal and Caval Systems.
The "H" tube may be used to connect any part of the Portal System to the Caval System, but the technique is quite simple if lower tributaries of the Portal System and the Caval System are used. (Note circled portion)

Figure 3.
Normal Portal System pressure: 14 to 22cm. saline
Normal Caval System pressure: 6 to 14cm. saline
Portal System pressure in intrahepatic obstruction (cirrhosis): 22 to 60cm. saline
No definite correlation between portal system pressure and severity of symptoms. Many portal hypertensive patients never bleed.

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*Presented before the Section on Surgery of the eighty fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

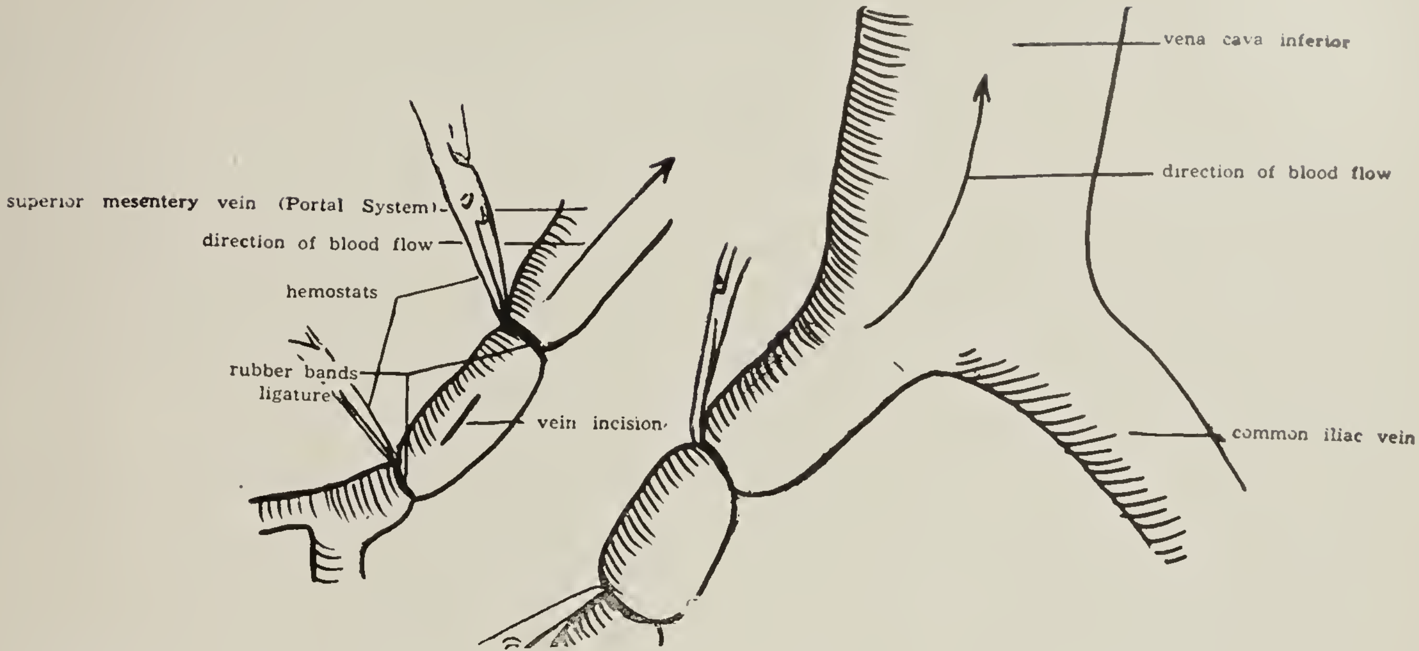

superior mesentery vein (Portal System)
direction of blood flow
hemostats
rubber bands
ligature
vein incision
vena cava inferior
direction of blood flow
common iliac vein

Figure 4.

One limb of H tube inserted in vein (superior mesentery) ligature tied

Rubber band occlusion not released until other limb of H tube inserted in Caval System vein and ligature tied.

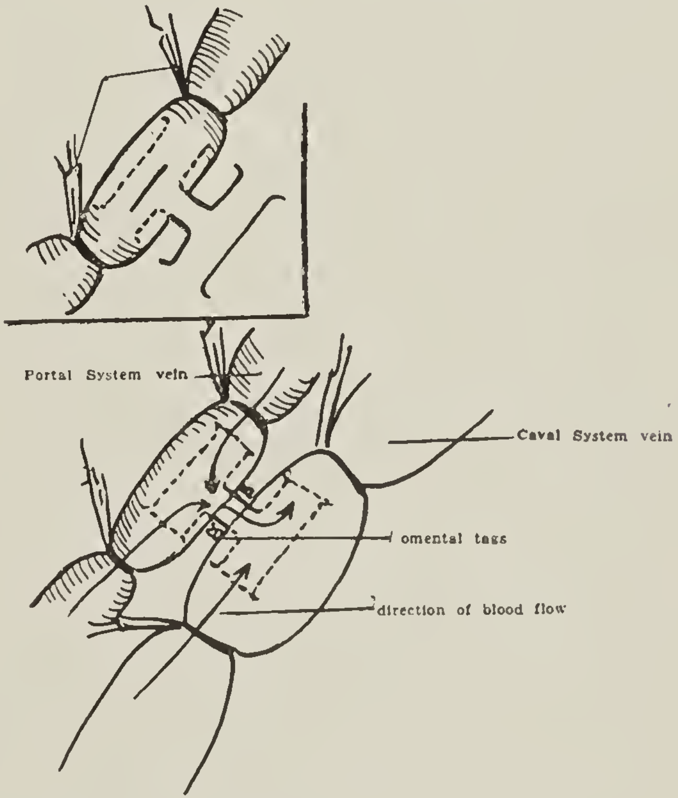
Tag of great omentum sutured around horizontal limb of H tube between the anastomosed veins.

Hence, the possibility of a cure of hepatic cirrhosis by perfusion of the liver with a combination of fibrolytic agents (ACTH and kutapressin) is occupying my spare time at present and to date I am quite pleased with experiments in progress. These few crudely designed illustrations attempt a graphic representation of the technique described.

CONCLUSIONS

1. Another method of reducing portal hypertension is offered because of the utter simplicity of its execution.

2. The possibility of a cure of hepatic cirrhosis and relief of portal hypertension by perfusion of the liver and fibrolytic agents is suggested.


Portal System vein
Caval System vein
omental tags
direction of blood flow

Reversed direction of blood flow until pressures equalize — time variable

Figure 5.

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Present Day Trends in Management of Congestive Heart Failure*

BEN R. HENINGER, M.D., F.A.C.P.†
Gulfport, Miss.

INTRODUCTION

MOST CASES OF congestive heart failure respond to present-day treatment and can be satisfactorily taken care of in the physician's office or the patient's home. Needless hospitalization of patients with early or moderate congestive heart failure has added much to the high cost of medical care which is steadily rising. Such cases, which now can be treated ambulatory, constitute a large group of patients having some degree of congestive heart failure.

There are two other groups of patients with congestive heart failure quite different in their manifestations and management.

The first of these two other groups I wish to mention is the occasional patient, who has been doing well for a varying interval, on the conventional modern treatment of congestive heart failure and who suddenly develops an episode of acute pulmonary edema (acute left ventricular failure), requiring urgent measures to combat this emergency. These measures will be discussed later.

And finally there is the minority group of patients with congestive heart failure who, after months or even years of satisfactory response to ordinary measures, insidiously slip into an alarming downward course and become refractory or intractable.

Infrequently the internist is called to see a patient with advanced congestive heart failure and edema who never makes any appreciable response to all the modern methods at our command.

In this paper, I wish to discuss congestive heart failure from the standpoint of these three categories. In the short allotted time the author begs off if he appears too brief in the discussion of the many phases of treatment best indicated for each category.

GENERAL MEASURES

As stated above, the majority of causes of congestive heart failure are amenable to present-day treatment. The clinical manifestations can be in most instances favorably combated by rest, digitalis, oxygen, salt restriction with water balance adjustment, diuretics, sedation to assure complete rest, at times paracentesis. Briefly each of these measures will be discussed.

Rest and Sedation: Rest remains a major role in treating congestive heart failure. It is essential to consider rest in the emotional as well as physical sense. It has been established that the most effectual position of the patient under treatment is semi-recumbent or even sitting in a chair if this affords less distress to the patient. Such positions provide less body activity, diminished metabolic requirements and thus result in less demand on the taxed heart. Complete relaxation, free from emotional distress, is desired and in order to get this and thus derive the greatest benefits from rest, the use of sedatives should be employed. The barbiturates are efficient to a varying degree. A good night's sleep is essential to ultimate success and should be assured. The conventional hypnotics such as nembutal or seconal will suffice. Morphine usually can and should be avoided, especially if associated with the case, there is chronic pulmonary disease such as emphysema. Here, we wish to recommend the bedside commode and urinal for eliminations, rather than the cumbersome bed pan of the old days.

Digitalis: Digitalis remains the drug of choice in the treatment of congestive failure. Its pharmacological effects have a marked influence on the inefficient heart. Systole is increased, diastole is prolonged, cardiac output becomes greater, thus diminishing cardiac dilatation and in all, working for a more efficient cardiac function.

Today with digitoxin, we have probably the best digitalis preparations of all times. There are several preparations available and on paper they approach each other in potency but it probably is wiser for the physician to become familiar with one or two of these preparations and use these exclusively. The digitoxin is long lasting, more uniform in the standardization and potency, causing less gastric disturbance than the leaf. It has been stated that effects from a digitoxin is demonstrable within 30 minutes after taking orally, with maximum effects taking place in 6 to 8 hours.

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†Cardiologist, Veterans Administration Hospital, Gulfport, Mississippi.

*Presented before the Section on Medicine at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

The "digitalizing" dose ranges from 1.2 mg. to 2.0 mg. depending on the size of the patient and other factors.

The rapidity at which digitalization is accomplished depends greatly on the urgency of the case. Usually in moderately severe congestion, the initial dose of 0.4 mg, to be followed by 0.2 mg. daily until desired or toxic effects become manifested, will produce desired results. The followup daily maintenance dose ranges from 0.1 to 0.3 mg. Probably 0.2 mg. will suffice in the average patient. In congestive failure cases with filbrillation and pulse deficit, the heart rate should be used as a guide rather than the pulse rate.

Intra-muscular injection of digitalis is not advised, and is rapidly disappearing as a means of administering digitalis.

Should the clinician deem the case presents an emergency, lanatoside C. 0.4 to 0.8 mg. can be given intravenously. We have found such a need extremely rare.

Oxygen: Oxygen is seldom essential in the treatment of congestive heart failure unless there is marked cyanosis, or an associated emphysema. Where required, it may be used in 90 per cent concentration, by tent, mask or nasal catheter, depending on the availability and reaction of the patient to the technique of administration. The best method of administration is the one giving the patient most relief and less distressing reactions.

Salt restriction: Low salt intake is recommended to combat edema, accompanying congestive heart failure. The degree of salt restriction depends on the patient's response to the over-all treatment. Many investigators[1,2] have pointed out the advantages of sodium restriction and have advocated in a general way that the diet should contain no more than 3 to 4 gms. sodium per day. Anderson[3] of the Mayo Clinic, in a recent paper mentions abuses of low sodium content diet in cardiovascular disease. In a general way he advocates restriction of salt in heart disease only if there is associated renal mechanisms causing electrolyte and water retention. Many such diets have been suggested. Soon there will be released by the American Heart Association a cook book, "Recipes for Low Salt Diets", I have seen a prepublication of this book and it is excellent and will be useful to all who treat congestive heart failure.

Water balance is considered an intricate part along with salt restriction. The amount of fluids allowed per day, now appears of little significance as long as the patient remains on and actually carries out a restricted salt intake.

Outstanding clinicians vary greatly as to the daily allotment. We have thought the amount of fluids required to keep the patient comfortable was the best. Between 1500 cc. to 3000 cc. is the conventional range.

Diuretics: In congestive heart failure the control of edema is the first essential to restoration of adequate cardiac efficiency. Each case presenting edema is a problem in itself; by this it is meant there is no specific pattern for all cases. The extent of the edema and the clinical course of the cases determines the dosage and type of diuretics to be employed. An accurate weight, intake and output chart are essential to determine dosage and intervals of injections. The patient is to be weighed at least every third day. The object is to attain the optimum or "dry weight".

The xanthine diuretics are as a rule inadequate by themselves. The drugs most frequently used are thiomerin or mercuhydrin. Our personal experience favors mercuhydrin while many investigators prefer thiomerin, because it can be given subcutaneously, is usually painless and can be self-administered.

The dose of mercuhydrin depends on the extent of edema and the urgency. Conventionally we prefer 1 cc. intramuscularly 2 or 3 times weekly, rather than the 2 cc. doses less often. Gold[4] states it can be given daily for prolonged periods without toxicity.

Infrequently, the clinician experiences a sudden diminution in diuresis which previously was satisfactory, regardless of what mercury diuretic has been employed. In such instances with the adjunct of oral administration of acidifying salt such as ammonium chloride 4 - 6 gms. daily, satisfactory diuresis will again be established.

For moderate to severe cases of edema our routine is to give 1 cc. mercuhydrin every other day for 4-6 doses, usually there is a loss of 2-4 pounds following each injection; gradually prolonging intervals between injections until "dry weight" is obtained. Follow-up with maintenance dose of 1-2 weekly injections indefinitely.

LEFT VENTRICULAR FAILURE

Acute pulmonary edema constitutes a cardiac emergency. It occurs most frequently in hypertensive heart disease with left ventricular hypertrophy. In other instances, it may be provoked by giving transfusions and infusions too rapidly and in too large quantities.

The onset usually is sudden with dyspnea, cyanosis, cough, progressing rapidly into pulmonary edema with large moist bubbling rales over both bases. The situation is now urgent, and demands immediate action. The patient is paced abed in sitting position or in a comfortable chair. Morphine gr. ¼ with atropine gr. 1/150 by hypo. Oxygen therapy, if available, will aid greatly. If the clinical picture indicates marked venous engorgement, phlebotomy has been life-saving and at least affords some aid in relief.

After the emergency it is mandatory the clinician institute energetic treatment, conventionally used in congestive heart failure, hoping to preclude future attacks.

The acidifying salts may or may not be necessary as an adjunct. When edema appears to have disappeared, a maintenance dose of mercuhydrin 1 cc. is given one or two times weekly to maintain "dry weight". As progress is made in the ultimate rehabilitation, the "dry weight" level may change, requiring a gain of four to five pounds is more likely to appear before discernible clinic edema.

Lately there has come into use cation exchange resins, the theory being that sodium is picked up and excreted by bowel. Our experience indicates this procedure does not permit high salt allowances, the resins are not palatable, and it is difficult to get patients to remain on them any length of time. At the present most internists have lost interest in cation resins and have given them up as good therapy. Salt substitutes as a rule are not continued long by the average patient and personally I don't blame them for this.

More recently certain investigators[5] have studied the effects of anticoagulant therapy in congestive heart failure. The studies have been relegated to cases showing thrombo-emboli. We have had no experience with such procedure, but such, as a routine, may not be advisable unless there is strict clinical observation and an adequate and dependable anticoagulant laboratory available.

INTRACTABLE HEART FAILURE

When intractable heart failure with apparent hopelessness assumes the clinical picture, several possibilities might be the underlying factor and the recognition and correction of these might turn the clinical course into a more favorable one. It might be well to determine a) Is the diagnosis correct? b) Has the past therapy been carried out properly; if so, is it adequate? c) Are there extra-cardiac factors influencing the case, such as the thyroid heart and that of avitaminosis, anemia, A-V aneurysm or recent myocardial infarction unrecognized, constrictive pericarditis, hypoproteinemia and infections?

Correction of these might readily change the future trend of the clinical course and provide what was once thought hopeless, to that of some degree of cardiac efficiency, after correction of the newly recognized hindrances.

Assuming the diagnosis is correct, and that therapy has been carried out properly and is adequate, most frequently the continued downward progress of the intractable congestive heart failure patient is due to kidney disease resulting either from the conventional treatment (mercurial diuretics) or from actual renal disease, associated with the heart disease, designated as cardio-renal disease of years gone by. This is especially true in the elderly patients who already have low renal reserve and from the blood chemistry, is revealed as moderately abnormal until the terminal stage of uremia becomes manifested and the blood chemistry finally denotes the true state.

Even though adequate, modern and conventional therapy has been employed, therapy may be a factor in apparent resistance of the congestive failure to improve. Lately there has been recognized by some investigators a mercury fastness to the mercurial diuretics[6], producing the so-called low-salt syndrome, electrolyte and fluids become imbalanced, leading to impending disaster.

According to Proger and O'Conner[7] the salt depletion syndrome, mercury fastness, as well as other electrolytic imbalances result from too great loss of fluids. Further, these authors suggest that the proper interpretation of low salt syndrone should include specific determination of the sodium as well as the chlorides. Marked diuresis often reduces chlorides only, but on the other hand, both sodium and chlorides may be depressed at the same time. With depression of the chlorides, there is alkalosis and hypochloremia which may be combated by the oral administration of tablets ammonium chloride, conventional dose 2-4 gms. T. I. D.

Should the extreme diuresis depress the sodium only, this situation may be helped by hypertonic sodium chloride.

Other investigators, too numerous to specify, have suggested other extra-cardiac elements influencing intractable congestive heart failure. Some of these are cellular changes in the liver, adrenals, and even the pituitary.

It can be said now that the terminal phase and death from intractable heart failure seems to result more from extra cardiac factors than from the actual heart disease itself. These extra cardiac factors appear to be mainly electrolytic derangements. It is hoped when a better understanding of the biochemical picture is obtained on a more substantial basis, congestive heart failure can be brought to a reversible state, and be compatible with a longer and useful life.

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DISCUSSION

DR. ARTHUR C. GUYTON (University of Mississippi School of Medicine)—In his presentation Dr. Heninger has pointed out very admirably the major problems which one must face in the management of patients having congestive heart failure. Aside from simple supportive measures such as bed rest, lack of exercise, etc., these problems center mainly around proper digitalization of the patient and proper fluid balance. It is not my purpose to elaborate upon this already complete exposé, but I would like, in turn, to talk for a few moments about the physiological principles involved in proper digitalization and in proper fluid regulation in patients with heart disease.

A. PRINCIPLES INVOLVED IN THE USE OF DIGITALIS: Digitalis is a drug which is so well entrenched in the usual medical armamentarium that very few doctors fail to use it when it needs to be used. However, digitalis is likely to be over-used in many instances.

In the case of congestive heart failure the heart musculature is usually greatly overworked, and, even though digitalis is used for many different cardiac conditions, it is probable that this drug is more important in the treatment of congestive heart failure than in all other cardiac conditions combined.

Digitalis, when given to a person who has normal myocardium, will actually weaken the musculature of the heart. On the other hand, it has been shown many times that heart muscle which is *diffusely weakened by overwork* can be strengthened by the administration of digitalis in appropriate quantities. Even here, use of too much digitalis can weaken the heart rather than strengthen it. Thus it can be seen, in the treatment of a heart which is not pumping a sufficient quantity of blood, one must determine whether or not this is due to diffuse weakness of the myocardium, and, if so, he must determine the appropriate quantity of digitalis to strengthen the heart but not a sufficient quantity that harm to the cardiac muscle can result.

Because some patients excrete digitalis four times as rapidly as do others, the use of the electrocardiograph in following the effects of digitalization is recommended very strongly, for under-digitalization is of little value and over-digitalization can weaken the heart and can cause almost every known type of cardiac arrhythmia. The beneficial effects of digitalis are usually evidenced in the electrocardiogram by the slowing of the heart. On the other hand, overdosage of digitalis is manifest usually, first, by changes in the T waves and then by records of extrasystoles, bigeminal rhythms, and auricular and ventricular tachycardias. Unfortunately, in a few cases actual ventricular fibrillation results from over-digitalization.

B. FLUID BALANCE IN CONGESTIVE HEART FAILURE: There are two reasons, in general, why excessive fluids in the body of a patient with congestive heart failure are harmful: First, excessive fluids cause pulmonary edema with consequent poor oxygenation of the blood. Second, excessive fluids can cause overloading of the heart so that the heart becomes weaker than ever.

Recent studies, including some from our own laboratory, have shown that in mild weakness of the heart, retention of a moderate amount of fluid in the body is valuable. This retained fluid increases the blood volume and increases the venous pressure. The higher than normal venous pressure then causes the heart to fill during diastole to a greater extent than would occur otherwise, and this greater filling of the heart, in accordance with Starling's "Law of the Heart," causes greater force of contraction and greater cardiac output.

On the other hand, when the total blood in the circulation increases to extreme amounts, this causes stretching of the cardiac muscle fibers beyond their physiological limits and weakens the force of contraction. Therefore, it is found that removal of fluid from a patient with congestive failure often causes the heart to strengthen and the cardiac output to increase. This is, obviously, one of the reasons why fluid retention must be obviated in patients subject to congestive failure. Yet, if the retained fluid were removed from the body of a patient with congestive failure to the extent that his venous pressure should return all the way to normal, it is probable that the patient would die in shock because of insufficient priming of the heart with blood returning from the veins. In other words, it appears that a certain amount of fluid retention is necessary when the heart is weak in order that the heart can pump maximum quantities of blood, and it is unfortunate that this fluid retention sometimes becomes so severe that pulmonary edema or cardiac decompensation results.

C. SALT RESTRICTION IN THE DIET: In recent years it has been found that the restriction of salt without restriction of water in the diet of the patient is usually sufficient to control cardiac edema in many patients. The reason for this is that the quantity of water in the body as long as the kidneys are normal is usually controlled by the quantity of salt in the body. The following mechanism of the posterior pituitary gland is mainly responsible for this relationship: Whenever too much salt is present in the circulatory system, this causes the crystalloidal osmotic pressure of the body to increase. The increased osmotic pressure then causes the so-called "osmoreceptors" of the anterior hypothalamus to send nerve impulses to the posterior pituitary gland, and the posterior pituitary gland, in turn, secretes the "antidiuretic" hormone. The "antidiuretic" hormone acts on the distal tubules of the kidneys to cause excessive reabsorption of water. Consequently, excessive salts accumulating in the body of any patient causes the accumulation of water. On the other hand, if the level of salt in the body is low, the above mechanism for the retention of water stops, and the water passes on out through the kidneys. It is valuable to know that restriction of salt without restriction of water in the diet is usually satisfactory in controlling cardiac edema, because kidney infection occurs very frequently in patients whose dietary water is greatly restricted.

DR. J. L. CLARK (Vicksburg)—Dr. Heninger's discussion of this important subject has been so well presented that I find very little left to discuss.

Congestive heart failure should constantly be suspected in a general medical practice. I find that, although we may be well aware of the symptoms and signs of this condition, we will occasionally see a patient not presenting this classical picture suddenly develop acute heart failure and follow with the usual picture of chronic congestive heart failure. The grouping of such cases as Dr. Heninger has suggested possibly may add lots to first impression errors. This condition frequently taxes the physician and patient to no limit before the end and if cared for on a more programmed and sound basis, will very frequently prolong what might at first have been a very hopeless case to a long, comfortable, and useful life.

The *home* treatment of congestive heart failure may save much financially and in many other ways. Certainly with improved and simpler methods of therapy, the results may even be better. Also, the unwise physical effort of the patient in getting to the office must be taken into consideration.

The commonest type of congestive heart failure that may be treated at home is the chronic failure so often seen in mitral stenosis with or without auricular fibrillation. These cases occur also as stages of other forms of heart disease, notably hypertensive cardiovascular disease, arteriosclerotic cardiovascular disease or coronary occlusion. In recent years the outlook for these patients has materially improved. Furthermore, the necessity for frequent house calls by the physician caring for these patients has considerably diminished. Some of the reasons for this improvement include better understanding of the use of digitalis or its preparations, the proper use of dietary measures, improvement in the use of theophylline derivatives and, lastly, the recent production of mercurial diuretics which can be administered by the patient himself.

Although digitalis has been in use off and on for about two hundred years, it is only in the last decade that we have learned about the extreme variations in dosage from patient to patient.

The dietary treatment of congestive heart failure should be directed toward the control of three factors in all patients and of a fourth in some. The sodium ion content of the patient's intake, his protein requirement and his avoidance of gas-forming foods are important in all of these cases. A reducing diet is a "must" in those patients whose illness is complicated by obesity, especially if the latter developed after age thirty.

The sodium content of the diet can be reduced by the proper selection of foods and the restriction of the use of certain common remedies. In the case of the latter, sodium bicarbonate, sodium salicylate, sodium bromide, and any other medicine containing sodium in appreciable amounts should be avoided. Obviously, foods cooked with ordinary salt, baking powder or baking soda should be eliminated. Unfortunately, this list includes a large segment of the readily available foodstuffs; examples of these are bouillon cubes, bakery goods of all kinds, salted butter, cheese, practically all of the condiments, crackers, canned, smoked or salt-water fish, all of the canned, smoked or salt-cured meats, olives and pickles, peanut butter, frankly salted foods, such as pretzels, potato chips, popcorn, nuts, candies, many salad dressings and mayonnaise, self-rising flours and all vegetables that have been canned with the addition of salt. On the other hand, lemon juice, vinegar, pepper and nearly all of the herbs may be used for seasoning foods. Sweet butter may be used ad lib. if the patient does not require a reducing diet. Nearly all beverages are low in sodium content except carbonated water. Most of the cereals are permissible. Most fruits, canned or fresh, are free of large amounts of sodium. However, if salt or sodium benzoate has been added they should not be used. Practically all lean meat which has been prepared without the addition of salt constitutes an important daily item in these diets. Unsalted nuts may be added to those diets in which an increase in caloric content is desirable. Most of the vegetables except beets, spinach and carrots are permissible so far as their sodium content goes, but some of them have to be watched from the point of view of their gas-forming propensities.

The popularity of the *rice diet* in some areas is due to the fact it enables a diet of extreme low sodium content.

Although it is extremely important to reduce the obese patient, it is equally important to maintain the caloric intake of the undernourished patient who is in congestive heart failure. In some patients this is difficult to do on a diet low in sodium. However, with most patients there comes a time when the diet low in salt and similar substances becomes the natural or habitual one in such a way that they have an aversion to salty foods. Furthermore, in patients who have no complicating disease of the kidneys, liver, adrenals or other organs capable of modifying electrolyte balance in the body, these diets may be maintained for long periods without alteration in the blood sodium levels.

The ability of the sodium ion to play an important role in the retention of water by the body is unquestioned. In the presence of impending or real congestive heart failure its importance is second only to that of the proper use of digitalis. The difficulties inherent in getting patient cooperation in the home on this regimen cannot be overstressed. It is comparatively easy to secure real coöperation on the part of the intelligent patient, but even here the modification of his way of life is so imposing as to make the risk of the development of an exaggerated, self-imposed heart consciousness very high. This part of the dietary regimen is so important, however, that it is worthwhile to stress it above all other metabolic considerations.

In summary, it may be said that it is now possible to care for many patients with congestive heart failure in their own homes without protracted, expensive hospitalization and without frequent house calls by the physician. The life expectancy of many of these individuals suffering from heart failure, from almost whatever cause, has been greatly prolonged in the past fifteen years by improved knowledge of the use of the methods mentioned.

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"MARCH OF MEDICINE"

October 8, 1953, 10 P.M., EST
NBC - TV Network

"New Hope for the Cardiac" will be the theme of the first television program in the fall series of "The March of Medicine," October 8. Originating in Boston, Massachusetts, one of the foremost medical centers in the United States, this program will reflect the advances being made not only in research, but in the treatment of patients with heart disease.

Clinical Coxsackie Disease*

WAYNE YEAGER, M.D., F.A.A.P.
Moss Point, Miss.

The clinician has for many years recognized that there are numerous influenza-like illnesses which occur during the summer and fall seasons when epidemic influenza is infrequent or non-existent. Also, it has been known that these influenza-like syndromes are usually mild, self-limited, accompanied by little or no serious complications and followed by an uneventful convalescence of short duration. The greatest incidence of these infections occurred among children with a few instances of infections among adults. In some ways the clinical picture of these infections resembled poliomyelitis. For example, the seasonal incidence and the tendency for dissemination in family groups are characteristics common to both poliomyelitis and influenza-like infections.

Although the clinical disease has been well known and the etiological agent has been suspected of being a virus, it was not until 1947 when Dalldorf and Sickles of the New York State Laboratories isolated the so-called Coxsackie virus (or C virus) in the village of Coxsackie, New York, from children suffering an influenza-like and poliomyelitis-like illness, that the causative organism was identified and proved to be at least one of the viruses responsible for these infections. Since 1947 numerous isolations of several strains of Coxsackie virus have been completed in many parts of the world and from several varied clinical syndromes. Because of these and subsequent studies, Coxsackie disease emerges now as a definite clinical entity. It is the purpose of this paper to discuss the clinical features and associated syndromes of Coxsackie virus infections.

The general clinical characteristics of Coxsackie disease are as follows:

1. *General malaise,* particularly at the onset of the infection.

2. *Muscular pain* or myalgia which may be accompanied by muscle spasm or tenderness. The muscle pain and tenderness may resemble poliomyelitis, but so far true "muscle-shortening" as found in poliomyelitis has not been reported in Coxsackie disease.

3. *Meningismus and aseptic meningitis* are fairly common and the cerebrospinal fluid may show a moderate pleocytosis (up to but not over 150-200 W.B.C.) predominantly lymphocytes. The total protein may be elevated but usually not over 60 mgm.

4. *Fever* is usually present and moderate in intensity. However, infants may show extreme pyrexia and may have convulsions.

5. *Generalized flushing and injection of all mucous membranes* of the upper respiratory tract, mouth and eyes. A painful sore throat is often present and mucous membrane ulceration, particularly of the soft palate and tonsillar pillars, may occur.

6. *Transitory-muscle paralysis or weakness* has been found in some cases. The exact pathological mechanism of this paralysis has not been determined. However, it is a transitory condition and results in complete recovery.

7. *Gastro-intestinal crises,* vomiting, cramps and diarrhea are often seen accompanying Coxsackie infections. This feature of the disease has not been emphasized enough. It has been observed frequently that familial contacts of Coxsackie disease suffer from a short-term, gastro-entero-colitis and recover without manifesting other symptoms of clinical Coxsackie infection. The author is inclined to believe that these G-1 upsets are abortive forms of the disease. This impression is supported by the fact that Coxsackie virus is so easily recovered from the stools of cases of the disease. Also similar G-1 upsets are noted in familial contacts of other virus diseases such as influenza and poliomyelitis.

8. *The incubation period* is short, most often three to five days.

9. *Recovery is complete* with little or no permanent immunity.

10. *Treatment is symptomatic.* No specific is known. No anti-serum or vaccine for passive or active immunity is available at the present time.

There are several main, recognized syndromes of Coxsackie disease. Actually, these "syndromes" are composed of the usual, common features of the disease but one particular characteristic is always outstanding. These syndromes are as follows:

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*Presented before the Section on Pediatrics at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

1. "Summer flu" (grippe) in which the clinical picture closely resembles epidemic influenza. The infection is mild and self-limited.

2. "Three-day fever", characterized by sudden onset and extreme malaise, headache and myalgia. The fever usually subsides after 48 hours or on the third day. Slight stiffness of the neck and back is a common finding and poliomyelitis may be suspected.

3. Bornholm disease or epidemic pleurodynia, is a variation of Coxsackie disease in which myalgia of the diaphragm muscles is the outstanding feature. The condition occurs in small localized epidemics. It was first recognized in Europe and is known to occur commonly in the United States.

4. Acute herpangina or Coxsackie virus stomatitis occurs mostly among infants and children. This syndrome must be differentiated from acute herpes simplex gingivo-stomatitis and spirochetal stomatitis and gingivitis. The ulcers of herpangina are "punched-out" in type, gray at the base and surrounded by red areolas. They are usually found on the anterior faucial pillars and soft palate.
5. Aseptic (virus) meningitis has already been discussed.

Coxsackie disease simulates so many other common pathologic conditions that the clinician is often frustrated in making a competent diagnosis. Many mistakes have been made and will continue to be made until an accurate method of identification of Coxsackie viruses is provided. While a great deal is known about the pathological conditions found in animals infected with C-virus, practically nothing is known of the pathology and pathogenesis in man. The careful, observant clinician will be able to identify many cases of Coxsackie disease.

The laboratory diagnosis of Coxsackie virus infections consists of two procedures:

1) Recovery of the virus from throat and stool washings from suspected cases and subsequent animal inoculations. Typical histological changes can be demonstrated in the suckling hamster or mouse.

2) Serological demonstration of specific Coxsackie virus neutralizing antibodies or compliment fixation test.

SUMMARY

Clinical Coxsackie disease is widespread and common in the summer and fall months. It presents itself to the clinician in several rather clear-cut, well-known forms and should be better recognized now that the etiological agent has been isolated and identified. There is no effective treatment for C-virus disease. It is hoped that a multivalent vaccine will some day be available for the prevention of this mild but frequently incapacitating disease.

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DISCUSSION

Dr. E. W. Eberling (Starkville)—To be sure there is little I can add to Dr. Yeager's paper, which covers the subject well. From the numerous reports in the literature since the discovery of these viruses in 1948 there can be little doubt that we may face a perplexing situation during the late summer when poliomyelitis is common in finding two viral agents in the same patient both antigenically different and both capable of causing similar signs and symptoms for varied periods of time. Certainly on clinical grounds alone it is extremely difficult to exclude either poliomyeltis or Coxsackie virus when a child presents fever, malaise, little or no pleocytosis of the spinal fluid, and muscular pain without reflex changes. Without laboratory examinations of pharyngeal washing and/or stool swabs only careful, repeated examination of the patient can disclose the differences during the early stages.

Fortunately, Coxsackie virus illness usually presents some typical syndrome within 48 hours such as high fever, with herpangina, or severe thoracic myalgia (Bornholm disease) whereas poliomyelitis presents increasing evidence of neurological involvement with ensuing hours and a somewhat lower temperature as a rule. The clinical picture and serum neutralization tests easily distinguish the two in late stages.

From the laboratory standpoint, the identification of Coxsackie viruses by their effects upon very immature suckling mice or hamsters is a very interesting example of the special affinity of some known viruses for the tissue of the very young. Two groups are recognized, group A and group B depending upon the pathological lesions predominating when the animals die. Group A viruses characteristically produce widespread striated muscle necrosis, waxy degeneration and proliferation of the sarcolemma cells. There is usually little central nervous system involvement. Group B viruses characteristically produce focal and scattered areas of waxy degeneration and cloudy swelling of the striated muscle bundles with considerably more central nervous system damage than is found in the other group. There are now about seven types of group A viruses and four group B viruses identifiable by this and by serologic means.

In man, as has been stated, the pathological features are obscure but it has been noted that in poliomyelitis patients from whom group B C-virus is recoverable and in whom serum neutralization shows active infection with the group B virus, paralysis is less common than in poliomyelitis patients having a concomitant group A C-virus infection. The real significance of this is as yet unknown. Coxsackie viruses are thermostabile and resistant to pH changes in the same general ranges as the poliomyelitis viruses.

One wonders if perhaps Coxsackie virus infection occurring during the first eight weeks of human pregnancy might be a cause of congenital defects in infants similar to those produced by the Rubella virus.

Finally, epidemiologically, the demonstration by Syverton et al. that the American cockroach, Periplanetas Americana, can excrete sufficient Coxsackie virus daily to kill normal 24-48 hour suckling mice for 15 days after being given a single oral feeding is extremely helpful in pointing out the potency of these viruses and may be helpful in elucidating the epidemiology of poliomyelitis since the cockroach can presumably act as a vector for the latter also.

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Cancer and the Arthus Phenomenon*

MARION T. DAVIDSON, M.D.
Birmingham 3, Ala.

Maurice Arthus in 1903[1] described the condition which he encountered in giving horse serum to rabbits in a series of doses six to eight days apart. Ever since his article appeared this condition has been known as the Arthus Phenomenon and pathologists and allergists have been studying it without being able to find any application for it in clinical medicine.

Arthus found that in injecting horse serum into rabbits in a series of doses six to eight days apart that the rabbit took the first three or four doses without inconvenience. After the fourth or fifth dose an area of edema developed at the site of inoculation. If the series were continued the edema became more pronounced, and soon necrosis began and the whole area sloughed out.

The injections could be given under the skin, in the veins or in the peritoneum. The phenomenon appeared in some of the sites in the series. If the doses were stopped before necrosis developed the phenomenon slowly subsided but if the series were continued after that point other areas developed and the animal died.

In 1937 I had a case under perennial treatment for ragweed sensitivity who developed this type reaction after the second or third dose of ragweed solution given at intervals of about two weeks. It was necessary to stop the treatment as each succeeding dose made several previous sites inflame and break down. I have been studying the Arthus Phenomenon ever since that experience but without seeing any clinical application other than in cases under hypodermic treatments such as my ragweed-sensitive patients.

About a year ago I saw a young friend who was dying of generalized carcinomatosis and on hearing the account of his case I was impressed with the similarity between his case history and what might happen should a human being develop this type of hypersensitivity to some protein he was using or contacting, because the human being becomes hypersensitive to protein materials contacted in the normal processes of life.

The idea came to mind that if cancer were caused by Arthus Phenomenon hypersensitivity to proteins it should be possible to find the offending proteins by skin testing just as is done in clinical allergy. The further possibility occurred that elimination of the protein from use by the patient might result in reversal of the disease process and return of the patient to normal. This is what happened to Arthus' rabbits and to my patient sensitive to ragweed pollen. There is the further possibility that after accumulating a series of cases the most common offenders might furnish the basis for prescribing diets which are less carcinogenic than now used.

The Tumor Clinic of the Medical College has sent me several cases and several have come from other sources. To date eight cases of cancer have been tested each for about one hundred different proteins, by the intradermal method of skin tests. Several interesting facts have come to light in this series of eight cases. First, that in regard to tobacco which has been thought to be a probable cause of cancer of the respiratory organs. Of these eight cases three were of respiratory organs and none of them gave any reaction to tobacco.

Of these eight cases five had been intensive users of tobacco but none gave any skin test reaction to tobacco. Another common allergen is wheat and other grains, (corn, oats, rice, rye); none of these patients gave any reaction to any grains.

Of the common allergens three gave definite skin reactions on all eight cases. Milk, mustard and commercial liver extract gave 2 to 3 plus reactions on all cases. All were intensive users of milk and all had tried to build up their waning energy and strength by increased use of milk. Liver and mustard were also common articles of diet for most of them but not to the extent that milk is used.

In addition to milk, mustard and liver, one patient gave large reactions to egg and chicken meat. None of the others gave any reaction to any of the common meats, beef, pork, lamb and chicken.

From these experiences and observations tentative conclusions have been drawn:

First, protein hypersensitivity occurs in at least two forms:

A. Allergy or anaphylaxis, asthma, hayfever, urticaria etc.

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* Presented at the University of Alabama Seminar, May 21, 1953, Birmingham, Ala.

B. Arthus phenomenon hypersensitivity — cancer, acne, ulcer (stomach, etc.).

Second, the offending proteins are diagnosed by skin testing just as in allergy.

Third, the most probably causative proteins are:

A. Milk, egg, wheat and other grains in that order.

B. Tobacco and other inhalant allergens.

C. Other foods as spices, nuts, fishes, etc.

Fourth, the discovery of the sensitizing proteins and their elimination should result in reversal of the process and return to normal, if done before destruction of vital tissues.

Fifth, it has been shown that there is no immunity to protein hypersensitivity and desensitizing treatments by hypodermic administration are contraindicated.[2]

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Endometriosis a Common Pelvic Finding

Gilbert F. Douglas, M.D., F.A.C.S., F.I.C.S.
Birmingham, Alabama
(Guest Editorial Symposium)

The subject of endometriosis is of interest to every medical practitioner, especially to the gynecologist, proctologist, and those who are doing any type of pelvic surgery. Endometriosis has been described by Sampson as the presence of ectopic tissue which possesses the histological structure and function of the uterine mucosa. It also includes the abnormal conditions which may result not only from the invasion of organs and other structures by this but also from its relation to menstruation.

Nowhere else in human pathology does benign tissue possess the ability to invade surrounding tissue. The solution of its etiology and treatment offer a stimulating challenge to gynecologists, proctologists, and abdominal surgeons. Two general types of endometriosis which we encounter and in which glandular elements were described in myomata in many instances in the last half of the century: 1) internal and (2) external diffuse adenomyosis (involving either the anterior or the posterior or both) are frequently found. The uterus usually shows slight symmetric enlargement. Deep-lying glands of the endometrium, or perhaps the blood arising from them, seem to have a stimulating effect upon the musculature, which grows in irregular whorls. Localized nonencapsulated areas of adenomyosis histologically show the same picture as the diffuse type but limited to the extent of their growth. They have the submucous growths which project into the endometrial cavity. Circumscribed adenomyomas which are encapsulated like ordinary intramural myomas differ from them in that they contain endometrial glandular tissue.

Origin of the glandular tissue in these uterine growths was the subject of controversy between Cullen and Von Recklinghausen. Cullen maintained that the glands were of mullerian origin, Von Recklinghausen believed that they developed from remains of the Wolffian tubules.

The symptoms of endometriosis are varied. In the lesser degrees of invasion of the endometrium of the uterine musculature there may be a slight amount of pain, where more marked amount may cause considerably more pain. When the normal menstrual period takes place in the endometrial cavity these glands function and cause this throwing off of the bloody irritating material within the glands, producing considerable pain. In the pelvic findings there is in most instances an increase in size and firmness of the uterus; often the uterus is more than twice the normal size.

In making a differential diagnosis adenomyosis or the invasion of the endometrial glands into the myoma of the uterus should be suspected when a history of severe menstrual pain is acquired after the fourth or fifth decade of life. The treatment of this type of endometriosis, (that is the internal type) is based on the finding and often the differential diagnosis is difficult. The criteria for choosing between total and subtotal removal of the uterus are the same as those when hysterectomy is done for fibroids.

In the external type of endometriosis or ectopic endometrial tissue growing elsewhere than in the uterine musculature from within is of clinical importance much more frequently than the internal form of the disease. Actually we find that the two conditions histologically are about equal in a number of instances. In 1897 Pfannenstial described the first case of adenomyoma of the recto-vaginal septum. The endometrium was first described by Russell in 1899. In the same case a small endometrial nodule was present in the uterosacral ligament. Gynecologists are recognizing external endometriosis more frequently than formerly. The locations of the external type of endometriosis are found in many points. It is found present in the ovary, and is found as diffused and scattered in the pelvis: pelvic invasion on the uterine surface, tubal surface, posterior cul-de-sac, uterosacral ligaments, anterior cul-de-sac, omentum, round ligaments, broad ligaments, small intestines, and appendix.

In the abdominal or intra-abdominal nodules we find these implants on the recto-vaginal septum, recto-vaginal septum with recto-sigmoid involvement, recto-vaginal septum with vaginal extension, sigmoidal, anterior cul-de-sac, anterior cul-de-sac with bladder involvement, tube, broad ligament, round ligament. The extra-peritoneal type is found on the cervix, inguinal, umbilical, incisional-ventral, incisional-vulva region. Endometrial growths have been described in a great variety of places, chiefly within the female pelvis: the organ most frequently involved is the ovary. In opening the abdomen you will often find the little reddish points on the ovary or implants on the sigmoid, and on the uterosacral ligaments and other points in the pelvis.

This disease is very destructive in its nature, and the ovarian tissue is practically destroyed or is replaced by the endometrial implants.

TeLinde and Scott have attempted to distinguish between superficial spots and actual nodules. They have done a great deal of work on the subject of endometriosis. Often spots or implants are found in the vaginal vault which are very suggestive of malignancy as far as the appearance is concerned, but on microscopic examination it is found to have endometrial tissue. There is often a bit of confusion and considerable argument as to whether the lesion, so-called chocolate cyst, is of endometrial origin or not.

We can readily see the pathologist's viewpoint: for him to be able to declare that it is an endometriosis he has to find the presence of the glands and the cells, which is difficult in many instances if the process has been going on for some time and there is considerable pressure within the cystic cavity which obliterates the normal configuration of the glands and cells. The surgeon may know clinically that he has an endometriosis, even though the pathologist cannot confirm this by histologic findings with the microscope.

HISTOLYTICAL STUDY OF ENDOMETRIOSIS: It may present a variety of histologic pictures. When the endometrium grows in its setting of smooth muscle as in the round or uterosacral ligament or on the surface of the uterus, it often seems to stimulate proliferation of the smooth muscle which grows in whorls between the pits of endometrial tissue, histologically the growth may resemble internal adenomyosis. In many instances the glands and the stroma go through the normal cyclic changes identical with those experienced in the endometrium in its normal cycle.

In the early days of reporting cases of endometrial lesions outside of the uterus, Cullen and Russell stated that they believed the ectopic tissue, which was histologically similar to that found within the uterus was mullerian in origin. Not until Sampson's contributions which first appeared in 1921, did gynecologists begin to take seriously the task of studying the histogenesis of this disease.

The origin of this condition in the pelvis is still debatable. Sampson's theory that the endometrial glands traveled out through the tube from intra-abdominal pressure, probably is the one that is most commonly agreed upon, (however, that is still disputed). Sampson originally believed that the ovary acted as an incubator or hotbed for the implants on the peritoneum.

Endometriosis is a disease of menstrual life. Scott and TeLinde reported a series of 516 cases of external endometriosis, found 65.5 per cent to occur between the ages of 20 and 40. The most constant single symptom of endometriosis is pain, frequently this is pain which is associated with menstruation, after the patient has menstruated normally for a number of years without any dysmenorrhea. Dysmenorrhea is a frequent symptom of endometriosis. Even though it is one of the more frequent symptoms of endometriosis of an acquired pain after a period of normal menstrual flow, there are cases who have no pain or dysmenorrhea after acquiring endometriosis.

The condition of a menometrorrhagia is given by most textbooks as one of the most frequent symptoms of external endometriosis. In a study of Scott and TeLinde 26.6 per cent of cases in which operations were done primarily for endometriosis abnormal bleeding was present.

Sterility is frequently associated with endometriosis. The Hopkins group found that absolute sterility was present in 33.5 per cent, and the relative sterility in 46 per cent, however the absolute sterility is considered to be present in about 10 per cent of most all married women. In spite of the high instances of sterility in endometriosis, pregnancy does occur in association with it and patients go through to term without any great amount of trouble, in fact many have less pain during this period as there is no menstruation to cause the irritation. The presence of shotty induration in the cul-de-sac, in the utero-sacral ligaments, or on the posterior surface of an adherent retroposed uterus is probably the most suggestive single pelvic finding of endometriosis. Endometriosis of the recto-vaginal septum is usually of harder consistency than carcinoma. This is a very good differential point between the two conditions.

The treatment of external endometriosis is dependent upon the severity of the symptoms, the palpable extent of the disease process, the age, and the general physical condition of the patient, the need and desire for the preservation of the child-bearing function or menstruation and psychosomatic evaluation of the patient. Conservative surgery for endometriosis consists of removal of the whole involved ovary, or resection of one or part of both ovaries. Personally, I feel that in a younger person resection of the involved ovary with the removal of the implants as found, either by dissecting them out or by destroying them with the cautery is preferable to the more radical procedure such as oophorectomy or hysterectomy at this younger age.

We should not be confused and misled when we find endometriosis present and think that malignancy cannot grow at the same time along with the endometriosis tissue. Out of 516 cases of endometriosis Scott and TeLinde found 8 cases of co-existing malignancies, which you see gives something like 1½ per cent of malignancy associated with the endometriosis.

Endometriosis, (the internal and external type) and the adenomyosis, (or that condition in which we find the endometrial glands out in the musculature of the uterine tissue) is one of our very frequent problems in gynecology.

This disease is one of the most destructive of all of the diseases in the pelvis other than malignancy itself. We should be on the alert for this where we have abnormal changes in menstruation, or find small bluish nodular or pointed areas in the vagina, about the rectum, or in the bladder, as adenomyosis can invade not only the uterus but it invades the cul-de-sac, the peritoneal cavity, the bladder and also the rectum, it causes many strictures of not only the large bowel but is found in the small bowel. It invades the bladder to the point that a vesicovaginal fistula may occur.

That unique and interesting Californian, Luther Burbank, made a most valuable suggestion in *The Training of the Human Plant*, and his words are a sound background for a technical discussion of the mind problems of a growing child. He said, "Every child should have mudpies, grasshoppers, water bugs, tadpoles, frogs, mud turtles, elderberries, wild strawberries, acorns, chestnuts, trees to climb, brooks to wade in, water lilies woodchucks, bats, bees, butterflies, various animals to pet, hayfields, pine cones, rocks to roll, sand snakes, huckleberries and hornets, and any child who has been deprived of these has been deprived of the best part of his education." Not a calory or a vitamin, an ounce or a pound, an internal gland or an amino acid in the list, yet perhaps that paragraph is as deeply scientific as any Burbank ever made.

—W. P. LUCAS

The Modern Practice of Pediatrics, 1927

If You Want Background Information

PRIVATE PATIENTS IN MEDICAL TEACHING

A major problem in medical education today is the extent to which private patients can be utilized in the education of medical students, interns, and residents and the best methods of developing teaching programs centered entirely or largely around private patients. A related problem of tremendous interest and importance to many hospitals with few or no service beds is how such hospitals can develop teaching programs that will enable them to compete successfully for competent interns and residents with hospitals maintaining large public wards.

A stimulating analysis and discussion of this important problem is presented in the article "Private Beds in Medical Teaching" by S. Howard Armstrong Jr., which appears in the Sept. 12 issue of The Journal. Armstrong maintains that, provided certain criteria are met, teaching can be carried out successfully with private patients at all levels except possibly with that of the senior residency. These criteria may be summarized as follows: The patients must present the range of serious disease that physicians will encounter later in their careers. Opportunity must be available for students and house staff to follow the course of patients after discharge from the hospital. The members of the staff must be devoted to teaching and willing to make the sacrifice of time and effort that good teaching requires. The attending physicians must be sufficiently secure in their relationships to their patients to share responsibility with junior colleagues. Finally, the attending staff must be sensitive to the difference between mere training and true education.

It is pointed out that the most diffcult problems in utilizing private patients involve not the patient but the relationship of physicians to each other. The facets of these problems are analyzed at length in the paper, and examples of their successful solution are cited.

This discussion is notable for its realistic understanding of the problems facing student, intern, resident, fulltime teacher, the practicing physician and the patient in the organization of an effective educational program centered around private patients.

—Editorial, Jour. A. M. A.

THE FACTBOOK

Just published by the American Medical Association is a small booklet, Fact on Medical Education, based on the data for the academic year 1951-52. It has been compiled to provide a source of quick reference to the enrollments, financial support and faculties of the medical schools of the country.

This country now has 72 medical schools and 7 basic-science schools with a total attendance of 27,076 students, the largest number ever enrolled. Compared with the figures of 1940-41 this is an increase of 26 per cent. Much has been said concerning the shortage of doctors but the fact remains that the population increased only 16.4 per cent in ten years whereas medical-school enrollments increased 22.8 per cent. In 1952, 6080 students received their degrees from medical schools, the largest class ever to graduate. Of the 79 medical and basic-science schools 41 are privately owned, 35 are state owned, and 3 are municipally owned. Two new schools have just admitted a freshman class in the last two years, and 4 state universities are expanding their basic-science schools to four-year medical schools. A new medical school has been started in New York, and the possibility of new medical institutions is being considered in three other states.

Operating expenses of these schools amount to $80,000,000, and almost $40,000,000 more have been spent for special teaching, research and miscellaneous expenses.. Only 21 per cent of the operating budget comes from tuition fees. Of the 13,897 physicians on the teaching staffs, 49 per cent receive no income from their teaching, and only 20 per cent receive all their income from this source.

Factbooks of a similar type about other phases of medicine would be of value.

FOURTH BIENNIAL CANCER MEETING

The program for the fourth biennial meeting of the Mississippi Division of the American Cancer Society has been released by the executive vice-chairman, Mrs Elizabeth N. Wates, for November 18-19, at the Robert E. Lee Hotel.

The medical and scientific session on the afternoon of November 19 will feature Dr. Robert Moore of Galveston, Texas, on "Malignancies of the Bone"; Dr. R. Lee Clark of Houston, Texas, on "Modern Concept of Etiology and Treatment of Malignancies"; and Dr. Ralph R. Braund of Memphis, Tenn., on "Review of Cases with Discharge of Nipple."

BOOK SECTION

INSTALLMENT 4

Atlas of Rush Pin Technics

LESLIE V. RUSH, M. D.
Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

This is the fourth of a series of monthly installments to be published in the *THE MISSISSIPPI DOCTOR* during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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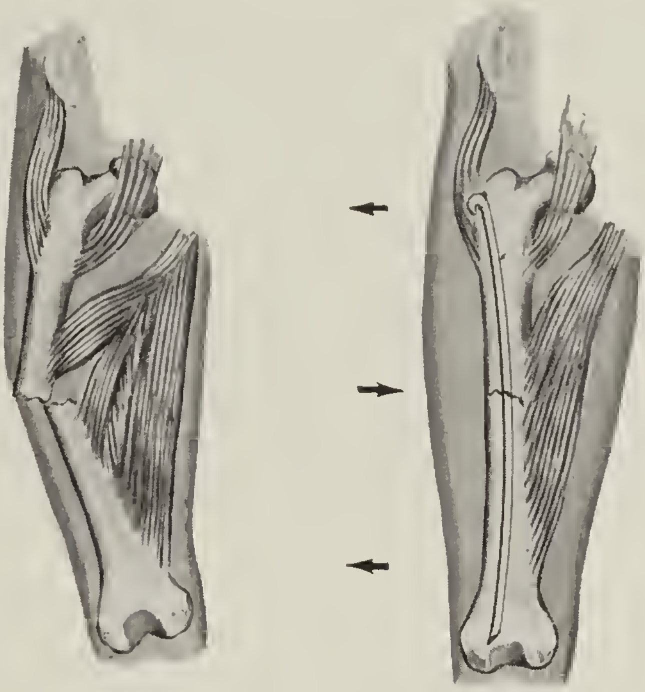
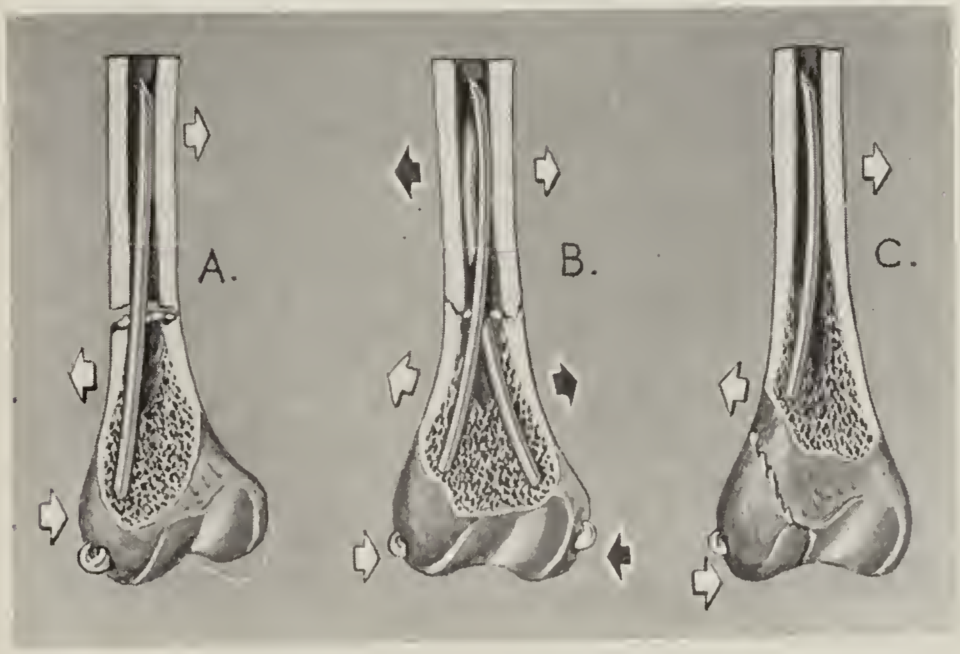


Dynamic Forces In Femur Pinning

The direction of muscle pull causes the bone to tend toward antero-lateral bowing. A curved pin resists these forces at three points to resist angulation and tends to limit torque.

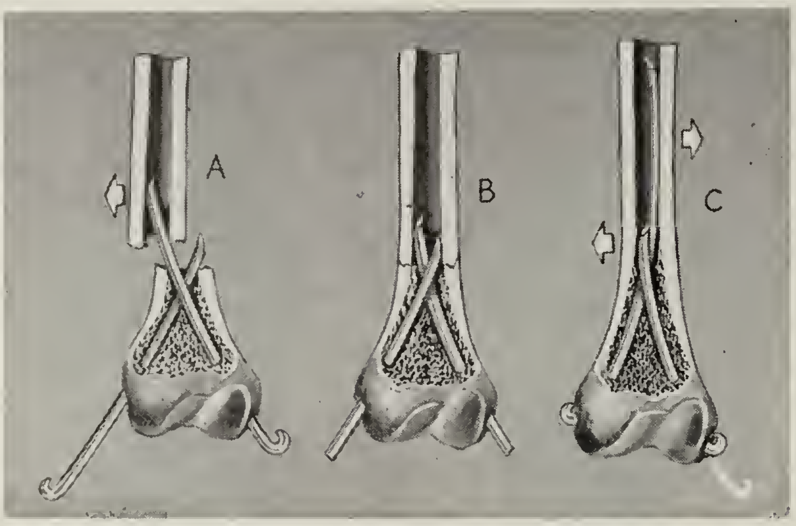


Vase of Flowers Principle As Applied to Lower Femur

(A) A single pin driven upward from the condyle exerts three-point pressure resulting in angulation and insecure fixation.

(B) A second pin to oppose the first gives three opposing points of pressure resulting in secure fixation:

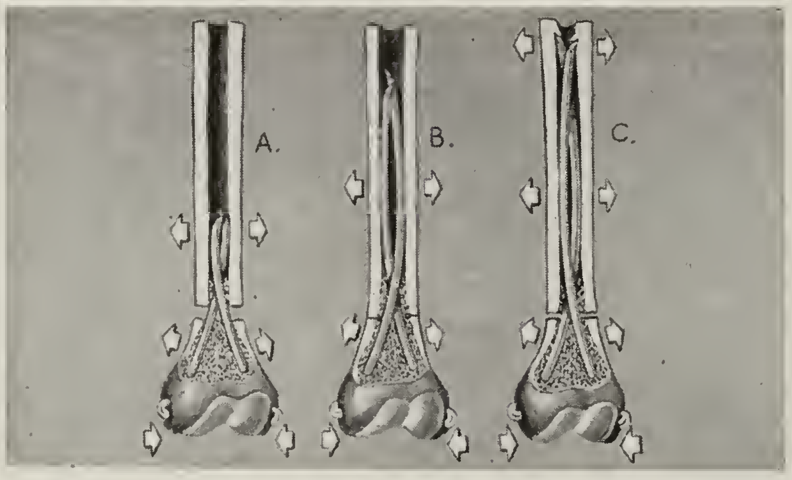
(C) Vertical fracture of the femoral condyle can be securely fixed by the three point pressure of a single pin. In this instance a continuous compression of the fracture surfaces is accomplished, which is conducive to rapid healing.



Driving Double Pins

(A & B) Double pins must be driven simultaneously— pressure of a single point will displace the shaft. When both pins are driven simultaneously the shaft will not displace.

(C) EFFECT OF LENGTH ON MIGRATION. The long pin exerts pressure by its shaft against the cortex and does not tend to migrate. The short pin is exerting pressure by its point against the cortex and will tend to migrate backwards by this continuous pressure.



Influence of the Length of Pins on the Dynamic Forces Exerted upon the Bone by the Pins

(Dynamic forces indicated by arrows.)

(A) PINS ARE TOO SHORT. Continuous forces exerted by the point against the wall of the bone causes the pins to migrate backward carrying with them the distal fragment. This will result in distraction and non-union.

(B) THE PINS ARE OF THE PROPER LENGTH. Lateral pressure is exerted by the shafts of the pins against the wall of the bone. This results in good fixation and permits the shaft of the bone to telescope upon the pins so that the muscle pull of the extremity can produce compression of the fractured surfaces to stimulate good healing.

(C) PINS TOO LONG. Note that the pins have crossed a second time so that the points are impinging, fork-like, against the wall of the bone. Some bone absorption at the fracture site occurs during the healing process. The fracture surfaces may thus be held apart to prevent compression with the result of delayed healing or non-union.

Recapitulation

(1) The vase of flowers principle (point pressure within the bone) can often be utilized for secure medullary fixation without the need of impacting the marrow cavity with large masses of metal.

(2) For dynamic fixation, pins must possess the qualities of strength, limited malleability, and limited resiliency.

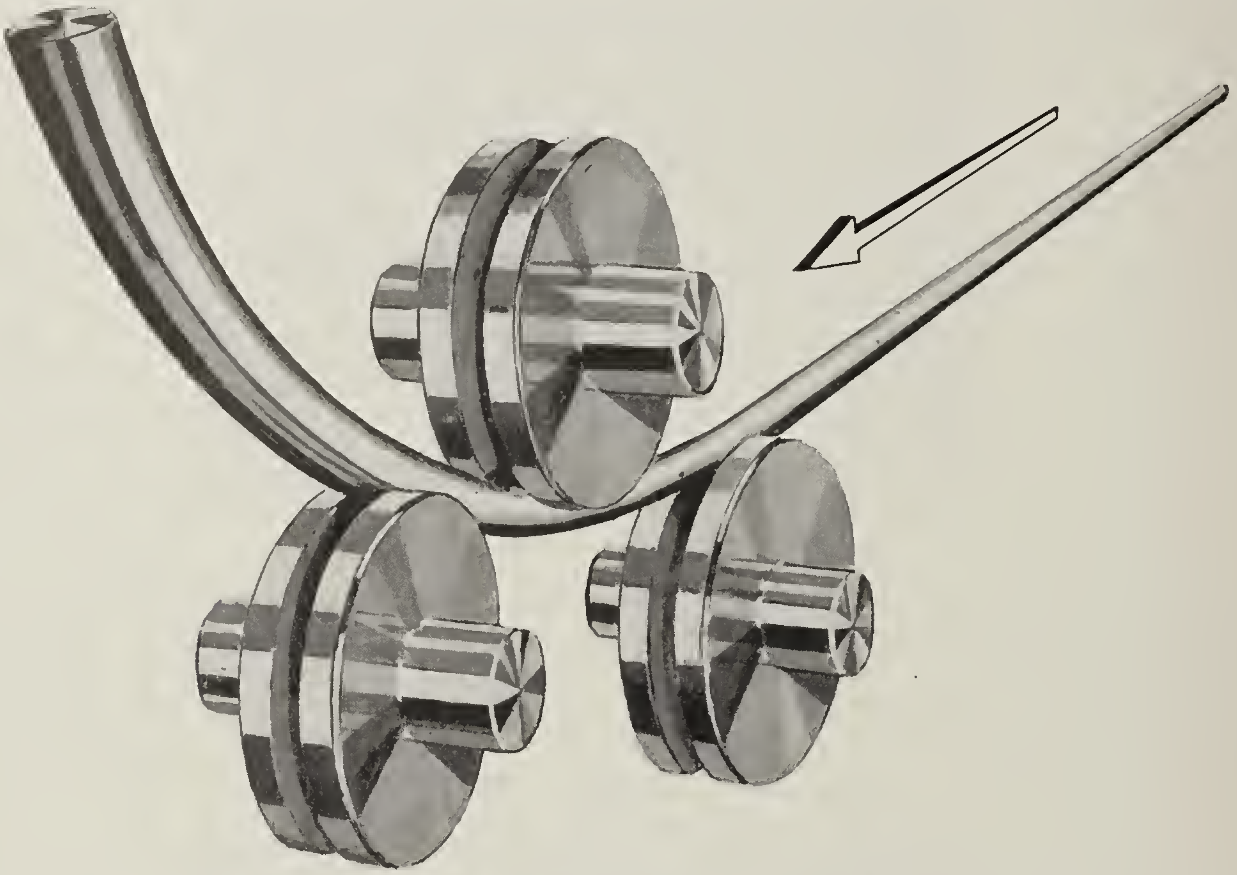
(3) Dynamic forces can be exerted by a straight pin within a curved bone or by a curved pin within a straight bone.

(4) Bone fragments in many regions tend to angulate during the healing period because of continuous dynamic forces exerted by the muscles of the extremity.

(5) The dynamic forces can be resisted to the surgeon's advantage by the intelligent application of straight or curved pins.

(6) Improper use of dynamic pin forces can produce angulation and deformity. Intelligent use of pin forces can correct existing deformities and produce compression of the fractured surfaces.

(7) Improper use of pins can cause distraction and non-union. Intelligent use of pins can result in secure fixation with compression and stimulate osteogenesis.



A straight rod may be forced into a curve by passing it through three pressure rollers.

10

STABILITY OF FIXATION

The Proximal Fragment

We are dealing with *two* main fragments which must be held in firm contact with each other. Rocking or twisting of the fragments at the fracture site must be minimal. A medullary rod can accomplish this only if it is given a secure purchase on each individual fragment.

The proximal fragment is the easier to deal with, because of the principle of three-point pressure.

Observe the rollers above. To bend anything one uses three-point pressure. But many factors will influence the behavior of the rod.

(1) The greater the pressure of the rollers, the more the rod will bend..

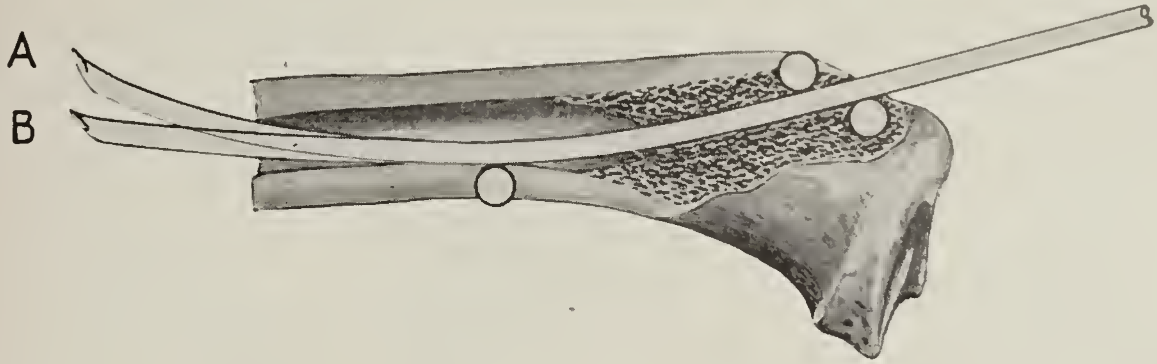
(2) Bring the rollers close together, and the curve of the rod increases.

(3) Spread the rollers apart, and the curve of the rod decreases.

(4) If the rod is soft or malleable, it conforms readily to the curvature which it tends to hold permanently.

(5) The more resilient the rod, the less readily it conforms to the curve and the more it tends to return to its original alignment (straight).

The resilience of the pin is such that if it is sprung like a bow, it will tend to return forcefully to its straight axis. On the other hand it can be set into a permanent curve by shaping it with the bending iron.

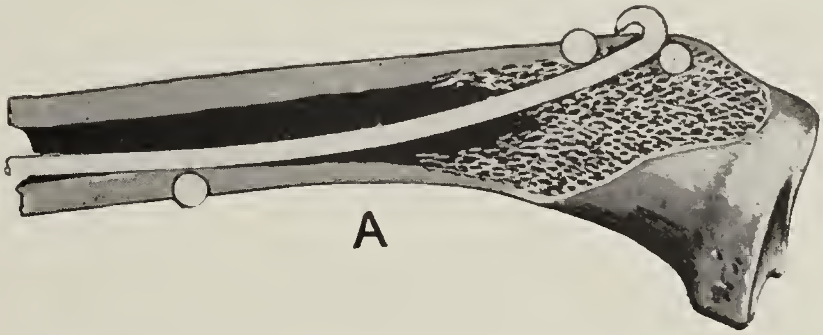


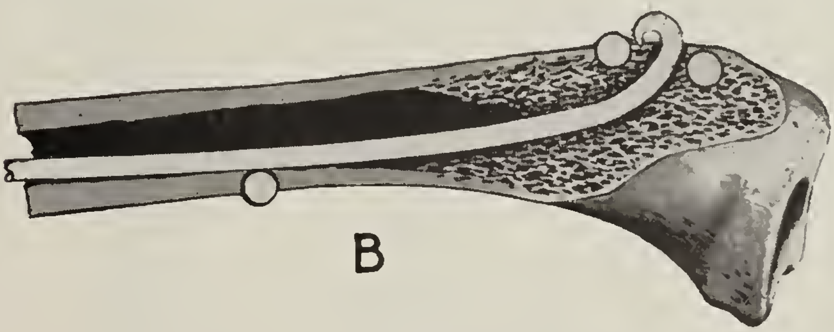
Influence of the Resiliency of the Rod

A straight rod or pin which is driven axially into the medullary cavity of a bone, through an opening in the side, is compressed between three pressure points, like the rod passing between the rollers. Thus the rod is forced into a curve of some degree.

(A) A soft or malleable rod assumes a permanent curve and exerts minimum pressure at these three points.

(B) A resilient rod tends to realign itself within the bone, exerting dynamic pressure at these three points.

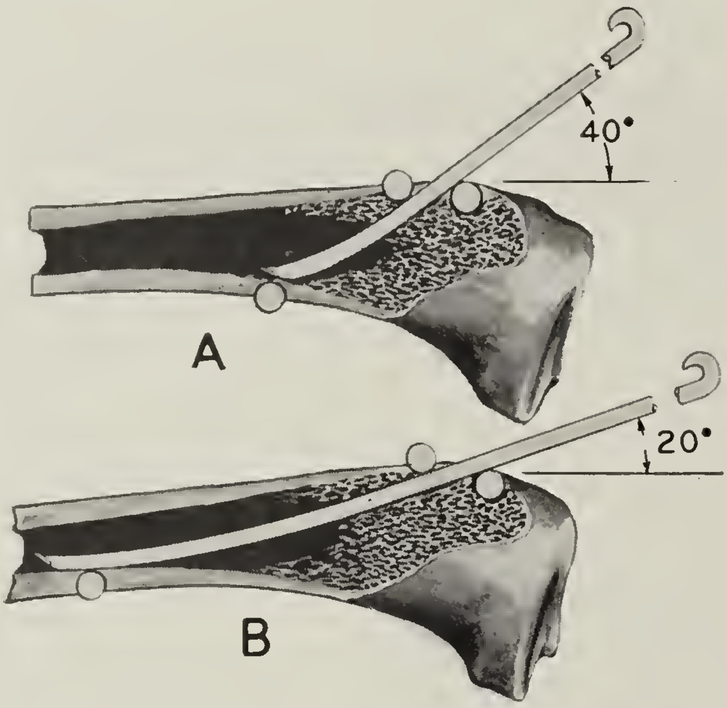




Influence of Precurving Pin

(A) As shown above, a straight resilient rod exerts strong pressure at three points. It has been forced into a curve and is continuously trying to return to its straight axis. It is dynamic.

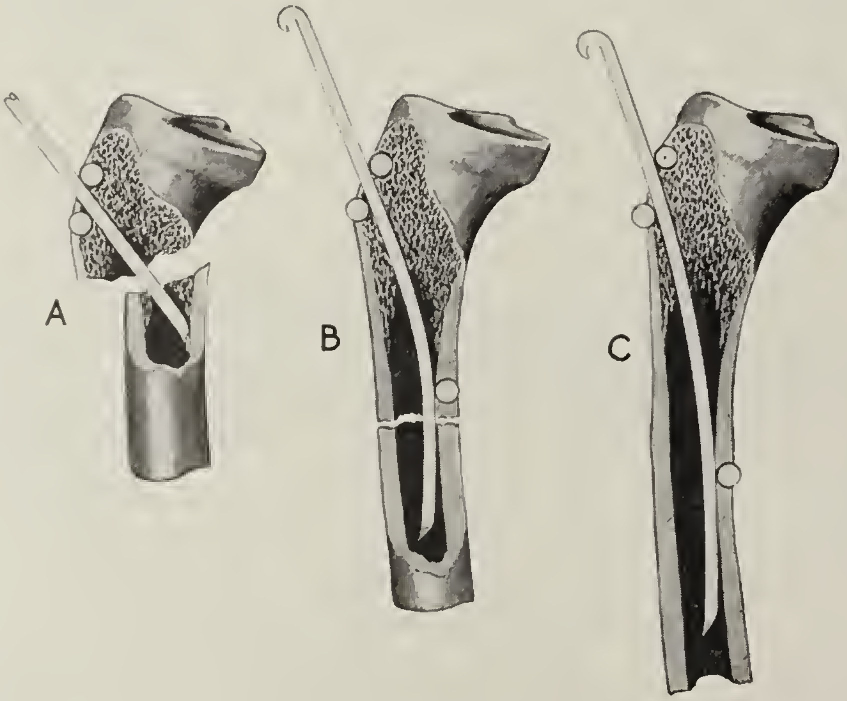
(B) The rod exerts less or no pressure at these three points if it is preshaped into a curve. The curved pin retains its curve. Since it is not trying to return to its straight axis, it becomes static.



Influence of the Angle of Insertion

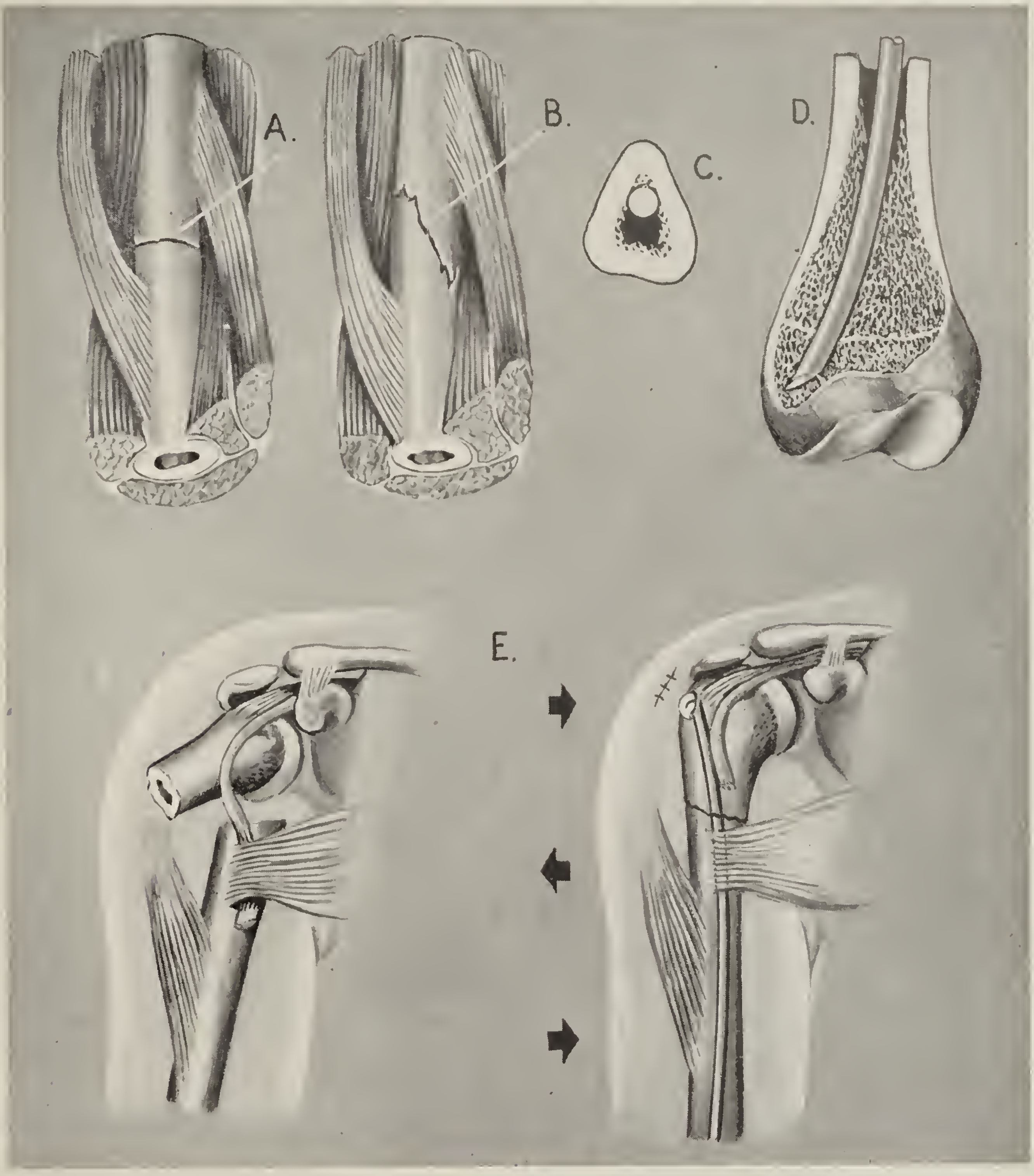
(A) The greater the angle of insertion, the greater the three-point pressure and the more stable the fixation. Here the "roller" is exerting more pressure, and the rollers are close together.

(B) The lesser the angle of insertion, the lesser the three-point pressure and the less stable the fixation. Here the "rollers" are exerting less pressure and have been moved further apart.



Influence of the Length of the Fragment

(A) Unstable. Three-point pressure absent. (B) Stable. Good three-point pressure. (C) More stable. Good three-point pressure.



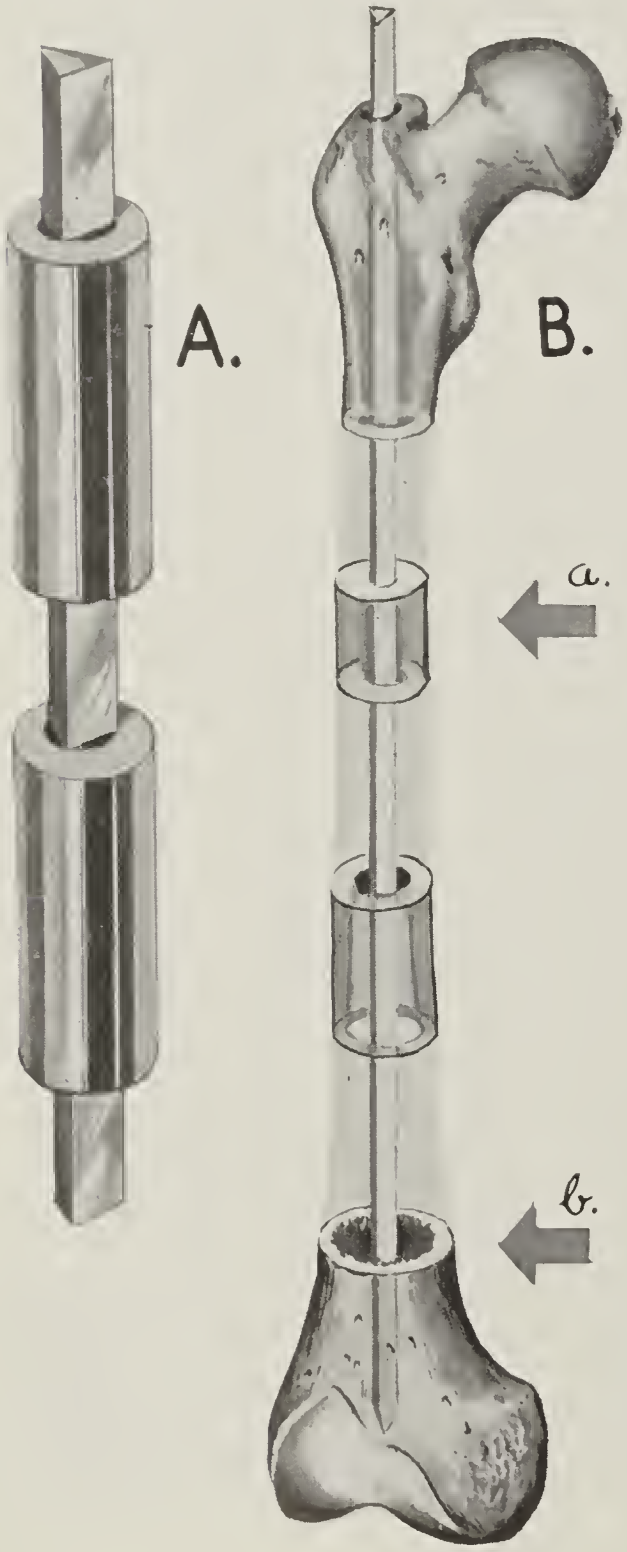
Influence of Other Factors

(A & B) Longitudinal muscle pull compresses fractured bone ends. In smooth transverse fracture (A) rotation might occur. Irregular fracture (B) is securely locked against rotation.

(C) Pin fitting in natural bone gutters increases stability. Particularly effective in lower radius.

(D) Point set against side of bone or obliquely set in cancellous bone.

(E) Transverse muscle pull. Example, three point pressure in neck of humerus fracture increases stability.



Where Is the Tight Rod Tight?

(A) A rod can be tightly impacted in a hollow pipe to control rotation because a pipe is of even contour and diameter throughout its entire length.

The medullary cavity of a bone, however, varies both in contour and diameter at various levels. A rod tightly impacted at one level will be loose at another.

(B) EXAMPLE FEMUR. A fracture of the upper half of the femur can be securely transfixed by any type of medullary rod because in this region, the bone is of fairly even diameter.

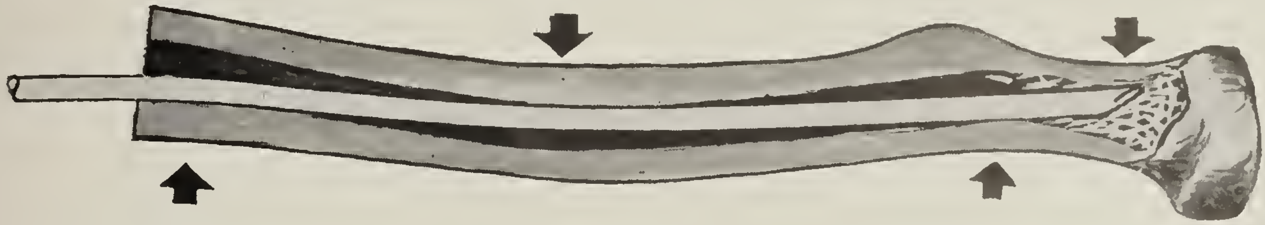
The medullary cavity is narrowest at the isthmus (a). The lower half of the medullary cavity is large and trumpet-shaped (b).

Any rod, which will pass through the isthmus (a), regardless of its shape in cross section, will be loose in the bone at (b).

Such a rod driven straight into the distal fragment must depend solely upon the doubtful firmness of the cancellous bone of the condyles for stability and the prevention of rotation of the lower fragment.

This is reliable only in young, active individuals. Cancellous bone has little substance in debilitated and inactive adults, and is almost absent in the elderly.

It thus becomes apparent that for stability of fixation of the lower fragment, the surgeon must depend not upon the irregularity of cross section of a straight rod, but upon the more dependable dynamic factors which can be utilized.



Fixation by straight pin in a curved bone. Proximal fragment of radius (here considered distal fragment) is mildly tortuous in axial contour. A straight pin exerts dynamic pressure at several points.

Distal Fragment

By distal, we here refer to the fragment remote to the point of introduction of the pin.

Generally, for maximum stability, the pin is introduced through the shortest fragment. Rare exceptions will be discussed later.

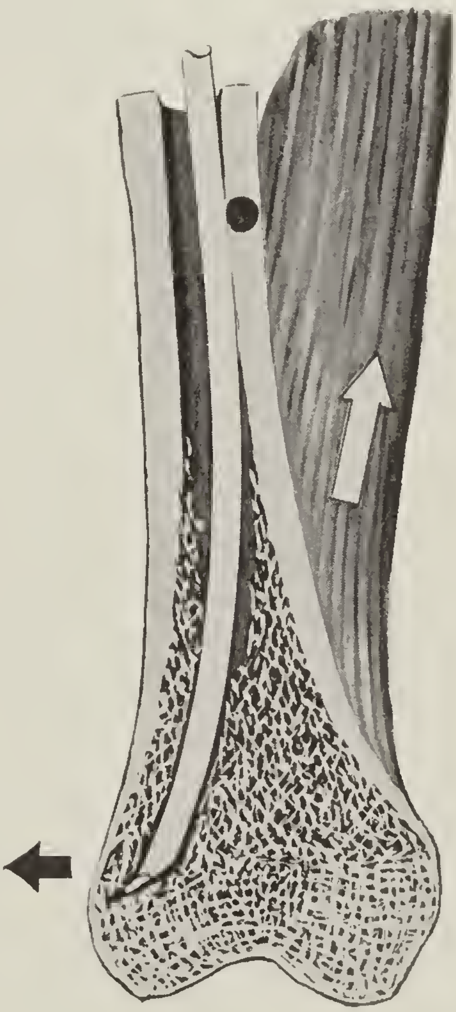
Stability of fixation of the distal fragment may be accomplished by:

(1) Driving a straight pin into a curved medullary cavity.

(2) Driving a curved pin into a straight medullary cavity.

(3) Placing the point obliquely into cancellous bone of the extremity of the bone.

Note: For good fixation, pin must secure stable purchase on *both* fragments. Otherwise deformity can occur.



LOWER FRAGMENT OF FEMUR STABILIZED BY CURVED PIN WITH POINT OBLIQUELY OFFSET INTO CANCELLOUS BONE. The adductor muscles tend to angulate the bone, with pin resisting this force by pressure at two points.

The Hospital School Nurse*

I AM HAPPY to speak to this assembly on a subject which I consider to be of greatest importance, because every man, woman and child in the United States and every person in the armed services is touched by it. It strikes at the very freedom of our nation.

In 1945 a small group of nurses (less than twenty-five) incorporated the National Nursing Council, and Esther Lucille Brown, Ph.D., was employed to set forth a new order in nursing which consists of drastic changes. This new order would demolish the hospital schools and would reconstruct nursing education.

The new order proposes that "the preparation of the professional nurse belongs squarely within the institutions of higher learning," and all hospital schools of nursing must "become integral parts of universities or drop into the ranks of semi-professional schools." It declares that even the 147 good or excellent hospital schools of nursing must "find their future within a larger frame of reference" or "little but extinction remains" for them. The new order recommends that in place of the registered nurse, two groups of nurses be substituted, the professional nurse and the practical nurse. The title "professional" would be allowed only to nurses graduated from university schools, and practical nurses would have from nine to twelve months' training—not enough time to acquire the knowledge or experience to be safe bedside nurses.

A small group has seized the power to regulate all nursing schools and has set up a technique for exterminating the hospital schools. They would eradicate them through "social pressure" by publishing periodically an approved list of schools and disseminating copies to every town and city. This list would not include the schools they wished to destroy, or, as they say, "schools not educationally sound," yet the National Nursing Accrediting Service always states that their service is on a voluntary basis. This claim may be true in a sense, but the consequences prove it to be false. Temporary accreditation was granted for five years. At the end of this time the schools must qualify for full accreditation or go off the accredited list. Four years from this date, the National Nursing Accrediting Service will have complete and dictatorial control of all nursing schools if effective counteraction is not instituted.

State boards of nurse examiners are being pressed to relinquish their educational functions.

In 1948 there were 1249 approved schools of nursing. Today there are 850 with full and temporary accreditation. Recently at one of the local conferences conducted by the League, a representative of a school of nursing asked the League representative what would be required to receive full accreditation for their school. She was told to give the graduates longer vacations and place the students on a forty-hour week. A forty-hour week for students would cut off more than five months from the three-year training period.

We believe that the hospital schools have done a valuable job in the past and can do a more valuable job in the future. We believe that an attempt to destroy these schools is bad on any basis, but at this particular time, when international affairs are so threatening, it is almost criminal.

Those sponsoring the new order say that the nursing profession must become socially motivated. They say there must be a re-orientation of the nurses in the direction of human and social goals. They say that student nurses should spend four years in college, with much more classroom work and much less caring for sick people, so they may have unhurried time for intellectual and emotional growth. They say that nurses should devote themselves to public health programs, educational and social work, the prevention of illness, research, the supervision of hospital services and specialization in other fields requiring a high degree of training . . . and not to the personal care of individual patients. The implication is that a nurse's *highest duty* is *public service* in *maintaining health* and that this service must not be jeopardized by the demands of sick people who *become ill through their personal failure to maintain health*. Who is to nurse the sick?

The objective of any program to improve nursing should be to make the nurse more thoughtful of the patient, more attentive to the sick patient's wants, more kindly, more understanding. But the effect of the new plan encourages a callous attitude among the young nurses. They would be taught to consider their hospital service as "laboratory" work. They would not serve the *sick* people, but use them as *guinea pigs*. The ideal arrangement under the new order would have the student nurse taking a course at a university and using a nearby hospital as a laboratory. The hospital would be prohibited from asking the nurse to perform any service for a sick person unless the university teacher approved the task as desirable for educational purposes. We must not forget that nursing is a service profession.

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* An address given by Miss Dana Hudson, R.N., at the Middle Atlantic Hospital Assembly, Atlantic City, New Jersey, May 22, 1953.

Under attack is the traditional idea of a nurse as someone able and willing to help sick people in their time of need, talented in guiding them back to health, possessed of the healing art, wise from long experience in the sick room. In times of crisis, when her patient suddenly goes cold or develops a raging fever and almost stops breathing, this kind of nurse does not worry about her lack of a college degree. Experience comes to her aid. She has a cool head, a quick mind, a steady hand, and confidence gained from having been in tight spots before . . . she brings her patient through.

Many young women who now become nurses could not afford a four-year college course because they earn their tuition by working in the hospital. This gives ambitious young women an opportunity and also benefits the public by reducing the cost of hospital care.

Nursing offers a career to many young women in small towns and country sections. To the public this is of greatest importance, for no finer people could be found to keep nursing upon a high plane. They come to the schools of nursing with the background of a Christian home, kind hearts, simple courtesy, pleasant personality, healthy bodies, habits of self-reliance, and the ambition to become the finest nurse that ever was. Such qualities are not learned out of books—nor are they awarded with college degrees—and, to the patient, they are more valuable than anything that can be taught in a classroom. The new plan would discourage such young women from becoming nurses. Many of them would not wish to become "practical nurses" and could not afford to become "professional nurses." The number of nurses available and the quality of nursing service would both suffer if the new order shuts the door against these young women.

Worst of all, the leaders of the new order have fastened their program upon the Registered Nurse, pretending that nurses are thoroughly informed about it and have agreed to it in detail. That simply is not true. The majority of nurses do not even suspect what is happening. The new order has been very cleverly camouflaged and subtly fastened on to the nursing profession.

This movement has placed the registered nurse in an unbelievable position. She is being blamed for the new order and is bearing the fruit of the fury. In many sections of the country, state legislative bodies are so disturbed over the new order and so pressed by the nursing shortage that they are passing unwise legislation which takes nursing out of the hands of the nurses, or passing legislation to bring in another group of workers to take over the work of the R. N.* I believe the new order is causing the registered nurse to lose the esteem which she earned and has so long enjoyed.

The Brown Report has not been officially adopted by the American Nurses Association or many of the state nurses' associations; nevertheless, a Committee to Implement the Brown Report was appointed. Later, for "public relation" reasons, they decided to change the name of the committee to the "National Committee for the Improving of Nursing Services." You may change a leopard's name but in so doing you do not change his spots. He is still a leopard by any name. The Brown Report is being implemented. The one thing needed to implement it to the letter is federal aid to nursing education.

An editorial appearing in the American Journal of Nursing stated that "The central point of disagreement seems to lie in the answers to two questions: *Can the traditional pattern of nursing education provide the public with an adequate supply of nursing service? Would nurses and the nursing profession profit by the perpetuation of this pattern?*

Their answer to both questions is 'no'. They give it coolly and matter-of-factly, as if the whole matter has been settled beyond a shadow of a doubt. Dr. Brown said that she did not know for sure that there was a place for the R.N. They are relying upon theories and ignoring the practical realities that govern the preparation of nurses worthy to care for the sick.

Many people vitally interested in nursing believe that the title "nurse" should be reserved for the individual who actually gives nursing care and that some other title should be found for the professional health worker, whom some persons idealistically hope to prepare. It has been suggested that this person be given the title of Practical Doctor or Doctor of Nursing.

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*(Mississippi law requires members of the Board of Nurse Examiners to be members of the League.)

Nursing education in the past paid its way in money and service combined. If all nurses are to hold a degree, federal subsidy will be necessary to produce the number of nurses needed. The old pattern has *provided* for free enterprise and freedom. The new order will destroy free enterprise and freedom and will produce political and governmental control of nursing education in its place. We believe in certain principles. We don't believe that we help people by doing for them what they can do for themselves, nor in dictating how it shall be done.

We believe that the hospital schools have proved themselves over the years, and that their best proof is in the product which they have turned out, the R. N. Her high standing is proof that her training must have been good. We believe that the traditional function of the nurse, caring for the sick, is still her highest function. We believe that the education of a nurse requires experience in the sick room, and that classroom study cannot be substituted in its place. One does not become a musician by simply learning the rudiments of music. In the baseball *profession,* one does not become an expert player just by studying the rule book. Both require much practice. So it is in nursing.

At this point, I should like to quote from the president's 1952 address of the National League of Nursing Education, delivered by Miss Agnes Gelinas. She said: "It is assumed by some of the people in the poor and mediocre schools that nursing practice is nursing education—that if a student practices over and over again the making of beds, giving of baths, and changing of dressings, and scrubbing for operations, that she is engaged in an educational process each time she carries out any procedure."

Let me give you an example of students' reaction to this statement. It is my privilege to teach a class of forty-six seniors in Professional Adjustments. I quoted Miss Gelinas and tried to sell them the idea of a two-year program in nursing. Remarks came fast from the group. One student said, "I'm just now understanding, in my third year, the theory that I learned in my first six months." Another said, "When I give a bath or make a bed, I'm nursing the patient, not carrying out a procedure as such. I'm making observations of the patient's condition to report to the doctor, and by spending this time with the patient, I am able to help with psychological problems. Nursing cannot be done by remote control." Enthusiastically and unanimously, they voted against the idea even though I pointed out that they would graduate one year earlier and thus start working earlier.

One young graduate of a basic collegiate program, after much difficulty in adjusting to the work situation, told me she was afraid and unsure of herself around the patient, and explained further that her only contact with the patient had been for demonstration purposes and that she knew little about nursing the patient. Nothing can substitute for practical experience. Our doctors request older graduates for critical patients. The curriculum should be studied and revised. Some courses should be shortened and some courses should be added. In many schools students take the regular 90-hour college course in chemistry which deals with chemistry as a science, and they are given very little of the physiological aspects as applied to nursing. Students have expressed a need for organized instruction in the social graces and Christian education. Both would enrich the curriculum.

Many of the present proposals are not new. The Goldmark Report in 1923 contained some of the same type of recommendations. It is interesting that the first paragraph in the Goldmark Report contains the following statement: "There was substantial agreement that the usual three years' hospital training was not in and by itself satisfactory for preparing public health nurses." Should the preparation of public health nurses be the criterion by which a school is permitted to function? Why not devise some other plan to finance the training of public health nurses?

Exploitation is an ugly word, but it has been hurled at hospitals in connection with student-nurse programs.

The present situation would justify the question of who is exploiting whom: And in my opinion, the hospitals are now and have been exploited.

The recommended curriculum now costs the average hospital about $500 to $700 per student per year over and beyond the value of the student's services.

There is a loss of 35 per cent among students, and many of these drop nursing because they are unable to carry the class work. Prior to the new order, 21 per cent was considered a high loss. All this has increased the nurse shortage.

Have the higher educational standards elevated the standards of nursing care? The answer is "no". The patient now receives most of his nursing care from persons with very little or no training.

It is odd that the doctors were left out of the planning of the new order. I do not have to tell this group that the doctor is responsible for the patient and that the nurse's chief responsibility is to carry out the doctor's orders. I have never known one physician who is aware of the situation to approve the proposed plan. I firmly believe that the majority of the medical profession would register disapproval if they were given a chance to express their views.

I readily agree that the nursing profession needs more nurses with advanced preparation to fill administrative and teaching positions. There is a great shortage of instructors in schools of nursing. Sufficient numbers are not to be found at any price. Many hospitals have assisted R. N.'s to gain further study by arranging their hours and work to enable them to go to school. A recent study conducted by the Southern Regional Education Board discovered that 165 R. N.'s were working toward their degree at the University of Georgia and were employed by Atlanta hospitals. I also believe that improvements can and should be made in the three-year school of nursing for the R. N., but I cannot believe it is wise to exterminate the R. N., the graduate registered nurse, who is the backbone of the nursing profession.

SAYS KEEP IT TO STATE LEVEL

(*The following expression is taken from a survey of views solicited from junior college heads over the state.*)

Dr. V. B. Philpot, Chairman
Committee on Nursing Education
Mississippi State Medical Association
Holly Springs, Mississippi

Dear Dr. Philpot:

I have received your letter of August 10, with three different sets of recommendations, together with letters from the American Hospital Association, the American Nurses Association, and the National League of Nurses, and other material in reference to the Nurses Training Program for Mississippi. Also, from adjoining states, indicating the small hospitals in Mississippi can get reciprocity in those states.

I think it is definitely shown, by the material you have furnished me, that there is no such thing as a national standardization in nursing training school programs in this country, and that each state is supposed to develop its own program. The information you have given me also is very conclusive, I think, in establishing the fact Mississippi nurses can get reciprocity in other states, and can be admitted to the Armed Forces.

The program for nurses' education in Mississippi has been of vital interest to me as a citizen and as a school man for a number of years. Our program, as presently operated in the state, is such that small hospitals do not have a chance to serve the needs of young people interested in nursing who might live in that area. Northwest Junior College and I feel that all higher institutions of learning in Mississippi are definitely interested in a program of nurses' education. Under the present organization, it seems to me that the hospitals are not utilizing the institutions of higher learning in the pre-professional training of nurses. The present program is confined to the large population centers and the great masses of people of our state are not always considered in the standardizing of nursing education.

Here at Northwest we feel that we could give all the didactic training that is presently required in nurses' education in the present hospital organization. The smaller hospitals are not allowed to utilize this facility and the larger hospitals are organized in such a way that the facilities of the institutions are not utilized unless they are located in the proximity of a large hospital. We would like to serve the needs of our girls who are interested in nursing, and we feel that we could serve as a recruiting agent for hospitals in Mississippi if the hospital in turn would accept and utilize our training facilities.

The courses that are considered vital to nurses' education in this and other states may be outlined as follows: Chemistry, Dietetics, Psychology, Sociology, Introductory Nursing Art—With Supervised Practice, Anatomy and Physiology, Microbiology, Hygiene and Sanitation, Applied Chemistry, Nutritions—Foods and Cookery, Professional Adjustment I and II. We feel that we could furnish a registered nurse to teach in some of these specialized fields and offer full credit for all courses.

By utilizing the institutions of higher learning in this training program, it would bring into the realm of reality the possibility of training nurses in the large as well as the smaller hospitals. In reviewing the three types of programs you presented to me, may I offer the following observations:

The nurses' programs of Tennessee and Louisiana are programs that are organized on the state level. These programs are within the realm of possibility for Mississippi. The thing that seems important to me is that these states organize their programs to meet the needs of the citizens and it seems that Mississippi should organize a program to meet the needs and conditions that exist in our state.

In reviewing the program as suggested by the Board of Nurses' Examiners for Mississippi, it seems to me that the welfare of the citizenship in the state of Mississippi has not been foremost in the consideration of the group. This program is more nearly adapted to states having many large population centers and cities which do not fit the case of Mississippi. We are rural in nature, having many small hospitals. These hospitals should be utilized to serve the needs of the entire citizenship.

In reviewing the program as outlined by those attending the conferences on nurses' training, it seems to me that the approach made by this group is more nearly in keeping with the needs within our state. If we can outline a scholarship program which utilizes the small hospitals and all institutions of higher learning, including junior colleges, in the training program, then it seems to me that an organization of this type would approach meeting the professional need of nurses' education in Mississippi. Young ladies in training in our small hospitals and utilizing our state medical center at Jackson and the larger hospitals in New Orleans and Memphis for specialized training would definitely serve as an asset for the training retention of nurses within our state.

In reviewing the report of the Mississippi State Medical Association, I find, in my thinking, that this group is doing a piece of work that is fundamentally sound. I trust that the general tone of the thinking of this group will permeate and guide the general conclusions of the committee on nursing education.

Dr. Philpot, I am most definitely interested in this program. I feel that I can speak for the Junior Colleges in Mississippi and state that they are most anxious to render a service toward meeting one of our critical needs which is in the field of nurses' training and education. We would like to have an opportunity to cooperate with every phase of our public that is interested in nurses' education. Our facilities are available and we are waiting for an opportunity to serve.

I trust that you will feel free to call on me if I may serve in furthering this or other programs of this type within the borders of our state.

Sincerely yours,
R D McLendon,
President, Northwest Miss. Jr. College

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THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

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MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College .... Poet

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

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EDITORIALS

TRAINING FOR NURSES

You will find some discussion in this issue of the journal on the nursing problem. We do need more trained nurses. This journal is vitally interested in this program, and the medical profession is concerned in it. The nurse is the right arm of the medical profession. It seems to us that the registered nurse, the R. N., has filled her place and degree much as the M. D.

With all of Mississippi's bests—roads, junior colleges, public health, T. B. Sanatorium—we also believe it is going to have the best medical school in the nation for training general practitioners, crowning its complete system of hospitals over the state. With such a set-up we can have the best system in the nation for training the registered nurse. We feel very sure that Mississippi will show the way in the training of nurses. Let us think and act in the best interest of the most people.

Our state president, Dr. M. Q. Ewing, is deeply interested in the nursing problem, and the papers in this issue are published at his request. We invite the views of any who are sincerely interested in the subject.

GOOD ECONOMY

This month emphasis is placed on employing the physically handicapped. Maybe we should say the handy captains, since the rehabilitated injured are proving very dependable and efficient workers. They produce at a slightly higher rate, they sustain fewer disabling injuries, they do not quit the job more often than the non-impaired, their absentee rate is no higher, and their range of skills is up to par. Rehabilitation of the injured and getting them into productive work is a big challenge to the nation. This is just and fair to the injured and it is good economy for our country. Instead of having to be helped the handicapped become helpers, in our daily economy. Injuries in everyday civil life far surpass war injuries, until we are said to have at least one injured out of fifteen in our working population now. The silver lining is that 97 per cent of these can be restored to useful work.

The medical profession must carry a big responsibility in restoring the injured, not only in rehabilitating them, but in helping to secure employment for them, employment in what the person can do best. Our medical schools will need to redouble their efforts, especially in the field of reparative surgery.

Like all other problems, prevention is the better solution. It is up to the man in general practice.

In 1951 motor vehicle deaths claimed 34,000 fatalities, seventy per cent of which took place in rural communities. Upon the medical profession, rests the burden of the physically handicapped, the mentally sick, the starved and warped in spirit, the victims of psychic trauma out of all of whom must be built a stable citizenship.

It is hoped that Mississippi may have a fine attendance at the Southern in Atlanta, October 26-29.

NEWS AND COMMENT

THE ATLANTA SMA MEETING OCTOBER 26-29

Dr. Jones

Program plans for the forty-seventh annual meeting of the Southern Medical Association have been completed by the officers of the twenty-one sections which compose the Association. Noted authorities will present papers dealing with the latest research and discoveries in all fields of medicine. The forty-seven half-day section sessions, the general session, conjoint meetings and the exhibits will make this meeting one of the most complete general medical meetings of the year. The physician will be able to receive the most intensive instruction possible, and enjoy the fine fellowship always afforded at the Southern.

Dr. Walter Jones of Miami, Florida, will preside at the Atlanta meeting of the Southern Medical Association. Dr. Alphonse McMahon of Saint Louis will succeed to the presidency, and Dr. R. L. Sanders of Memphis will be elevated to president-elect. Drs. W. W. Crawford of Hattiesburg, Miss., and Jere Crook of Jackson, Tenn., are the only two living founders of this association. It is hoped that they will be able to attend the meeting. Dr. Seale Harris of Birmingham, who for many years has epitomized the heart, the spirit, and the soul of the Association, will not be able to attend due to illness.

Dr. Lamar Arrington of Meridian is the councilor from Mississippi for the Southern and Dr. J. F. Lucas of Greenwood is the councilor-elect. Drs. W. W. Crawford, Felix J. Underwood, and Harvey Garrison, Sr., are Mississippi's three past-presidents of the SMA.

Location of meetings, registration, and exhibits will be the Municipal Auditorium, which is close to downtown Atlanta hotels.

Dr. Marion C. Pruitt and Dr. W. A. Selman, general chairmen, urge golfers, good and bad, to bring their clubs. "The good ones will try to add their names to the Silver Trophies, and the bad ones can find company at their own level.

"Many points of beauty and historic interest can be found here. Stone Mountain, the largest single mass of granite in the world, is within easy range. The Cyclorama at Grant Park depicts on canvas the Battle of Atlanta and is one of the largest paintings in the world.

"Remember that for October 26, all roads lead to Atlanta," they urge cordially.

AAPS

You are cordially invited to attend the AAPS 10th Annual Meeting of the Delegates and Assembly, Chicago, October 8-9-10, 1953, medicine's finest program on the socio-economic aspects of medical practice.

The guest speakers will include the Honorable John W. Bricker, U. S. Senator from Ohio, who is an authority on international law and is author of the Amendment to provide constitutional protection against the socializing of this country through international treaties. He will speak on his amendment at the banquet on Friday evening, October 9th.

The Mississippi delegates, Drs. Frank M. Acree of Greenville, and Edley Jones of Vicksburg, agree with national heads of this organization that a few citizens have been lulled into a sense of false security by President Eisenhower's and Mrs. Hobby's public declaration that they "abhor the words Socialism and compulsion." Yet, in almost the same breath and speaking for herself and the President, Mrs. Hobby publicly states that Social Security must be expanded (including doctors) and more people *compelled* to participate and to be compulsorily taxed to support their participation.

Pending legislation would establish or increase government control of the voluntary plans, the public health services, the medical and nursing schools and general education. Other proposals would open the door to more unjustified and unfair medical care to veterans with non-service connected disabilities, to their dependents and to the families of present military personnel. If this should be accomplished, almost half of the population would be receiving government-controlled and government-dispensed socialized medical care.

"Socialized medicine and over-all Socialism can be inflicted on the people through international treaties unless the Congress approves Senator Bricker's amendment and the states follow with supporting action by their respective legislatures," believes Dr. Acree.

"This exceedingly abbreviated but realistic picture of Socialism-Communism's progress convincingly documents just one of the many reasons why AAPS must expand and accelerate its services. It points up the need for two strong national medical associations (the AAPS, exclusively medicine's business organization, and the AMA, primarily a scientific group). The AAPS and the AMA stimulate each other to better performance in behalf of the profession and safeguard physicians from the many dangers inherent in having all of their national organizational 'eggs in one basket'," he concludes.

MSMA OFFICERS TO MEET

Officers of the Mississippi State Medical Association are called into conference for their first annual conference on October 7, at one o'clock, in the Silver Room of the Heidelberg Hotel. Dr. M. Q. Ewing, president, will preside. Agenda will include:

Briefing on Membership and Organizational Activity—George E. Twente, M.D., Secretary.

American Medical Education Foundation—Temple Ainsworth, M.D., Chairman.

Report of the Planning Committee—James Grant Thompson, M.D., Chairman.

State and National Legislation—(to be announced).

Allied Medical Agencies—Lawrence W. Long, M.D., Chairman.

Program Progress of the Committee on Rural Health—S. K. Johnson, M.D., Chairman.

State Medical Education Board Program—M. Q. Ewing, M.D.

Report of the Council—H. C. Ricks, M.D., Secretary of the Council.

DR. CRENSHAW HEADS AGP

The Academy of General Practice held its annual session in Jackson at the Heidelberg Hotel on Sept. 16 and 17, Dr. Gus A. Rush, Jr., of Meridian presiding as president and Dr. W. E. Lotterhos of Jackson as secretary of the association. At the close of the session Dr. C. P. Crenshaw of Collins was elevated to the presidency and Dr. W. M. Dabney of Crystal Springs was named president-elect.

The Academy presented a fine scientific program, upholding its fine purpose in bringing to the people better medicine, thus serving as a bulwark against socialized medicine. It is also helping in a powerful way to raise the general batting average of the medical profession, and presenting an improved type of medicine to the people. It takes into consideration the individual in his relation to life as well as the disease that is attacking him. It is helpful to show that the doctor needs to be a good citizen as well as to be well versed in scientific medicine.

Dr. R. B. Robins, of Camden, Ark., high-lighted the assembly with a fine common-sense address. "We medical people must concern ourselves as citizens with all the problems that concern other citizens. Socialized medicine can be thrust upon us by the simple matter of adopting a treaty," he urged. Veterans Administration medical service should be limited to those with service-connected disabilities, he believes. "The forty-hour-a-week practiced by those in allied professions has had a baneful influence on the practice of medicine and is largely responsible for the high cost of medicine."

This last statement hits the tap root of our medical problem. No person has ever amounted to anything worthwhile who has worked only forty hours per week. The Lord did not create the earth and man to function in this plane. But the goal of the average worker is forty hours a week with more pay. Too many think not of creative production and efficiency, but only in terms of hours and money and time off. If every person would give value received with interest the world would turn in a different direction, toward peace and happiness and security. But, alas, even doctors, some of them, are dreaming of forty-hours-a-week with larger fees and more time for pleasure. The medical profession could lead the world if it had the vision, the courage and the application to go forward on a new road.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN

Dr. Edward J. McCormick of Toledo, O., president of the American Medical Association, heads a list of distinguished authorities scheduled to speak on the care, treatment and training of crippled children at the 1953 annual convention of the National Society for Crippled Children and Adults, Nov. 12-14 at Chicago's Palmer House.

MID-SOUTH PROGRAM

The Mid-South Postgraduate Medical Assembly is on the way with one of the very best programs we have ever had. The father of this type of medical meeting, others have found such postgraduate assemblies the ideal refresher course. Still in the lead and keeping abreast with the best, the Mid-South invites you to mark time out now for the next meeting in February.

The following surgeons have already accepted a place on the program:

Dr. Warren Cole, professor of Surgery and head of the Department of Surgery, University of Illinois, will give two talks on surgery. Dr. Cole is well known and respected by physicians throughout the nation. He is the author of a leading textbook of surgery and was the co-discoverer of the original gallbladder x-ray technique whereby we were enabled to make cholecystograms.

Dr. James D. Rives, chief of Surgery at Louisiana State University, will also give two talks and will probably deal with the subject of intestinal obstruction.

Dr. Richard Gilchrist, Associate Professor of Surgery, University of Illinois, will discuss the management of the patient with cancer of the bowel, particularly from the point of view of the general practitioner. Dr. Gilchrist is an excellent clinical surgeon, has made contributions concerning the modes of spread of carcinoma, and has been interested very much in the human side of medicine as well as the technical side.

MISSISSIPPI HEART ASSOCIATION

Dr. W. K. Purks of Vicksburg has been chosen as president-elect of the Mississippi Heart Association, and charged with the responsibility of campaign activities for the 1954 Heart Fund. The goal for the 1954 drive is $80,000.

This is the third year of activity for this organization, ably headed by Dr. Joseph P. Melvin, Jr., of Jackson as president. Under the guidance of Dr. T. E. Wilson of Jackson, it launched its first year, and is steadily doing a growing and meritorious work in the state.

Miss Lucile Little, with offices in the name of the Mississippi Heart Association at 133 South Lamar Street, Jackson, is the executive secretary.

MISSISSIPPI PHYSICIANS TABULATED

A survey has been made of the number of physicians in Mississippi, their location, age, color, sex and distribution. The survey has been made by Margaret E. Rice, supervisor of Public Health Statistics. As of July 1, 1953, Mississippi had 1,565 licensed physicians. This includes all physicians except the doctors who are in active military service. This is an increase of 68 since January, 1953. About 96.4 per cent are white and 3.6 per cent non-white. Forty are female doctors. One thousand, or 64 per cent, are located in towns above 2500 population, 36 per cent in the rural areas. Fifty-three per cent of doctors past 60 years of age are in the rural areas. Less than one-fifth of those from 40 to 60 are in rural communities. About one third of both urban and rural doctors are under 40 years. Half of the rural physicians and only one-fourth of the urban ones are 60 or over. Under forty years, there are 536 or 34 per cent; those sixty years and over comprise 537 or 34 per cent of our licensed physicians. In 1947, the number of physicians under forty was about one half of those past 60.

From the above you may study the trends. The number of young doctors seems to be gaining on the old ones. The young physicians have a tendency to locate in the cities. Mississippi seems to be assured of a good supply of physicians.

AMITE-WILKINSON SOCIETY

The Amite-Wilkinson County Medical Society held its quarterly meeting at the Field Memorial Community Hospital at Centerville, Tuesday evening September 15. The program was presented by Dr. Richard (Dick) Field, son of Dr. and Mrs. R. J. Field, of Centerville. The program consisted of four speakers who were senior residents in their chosen specialties at Charity Hospital, New Orleans.

The first speaker was Dr. C. T. Thompson (surgery), who talked on the advantages of Potters needle aspiration of the abdomen as a diagnostic procedure.

The second speaker was Dr. Thomas Marlin, (anesthesia), who presented the uses and advantages of trilene anesthesia.

The third speaker was Dr. John Bise (gynecology), who gave the advantages of cul-de-sac puncture as a diagnostic procedure.

The fourth speaker was Dr. Robert (Bob) Mitchell (internal medicine), who talked on the present trends in the control of hypertension.

The society thanked Dr. Dick Field for bringing thjs excellent program by his associates from Charity Hospital where he is also specializing in surgery in Field tradition.

Among the distinguished guests present were Dr. and Mrs. Robard and Dr. and Mrs. Kirkpatrick of Jackson, La., Dr. and Mrs. Paul Jackson and Dr. Toler of Clinton, La., Dr. and Mrs. Carter O'Ferrall, and Dr. and Mrs. T. E. Wilson of Jackson, Mississippi.

An excellent dinner was served by Miss Boles and her staff of nurses.

NORTH MISSISSIPPI SOCIETY

Holly Springs welcomed members of the North Mississippi Medical Society on October 1 for an excellent dinner, highlighted by talks by Hon. Jamie Whitten, member of Congress, and Dr. M. Q. Ewing, president of the Mississippi State Medical Association. Both speakers proved most entertaining and informative.

At the scientific session Dr. Lorenzo Adams of Memphis discussed "The Treatment of Hemangiomas," followed by case reports presented by Drs. Philpot, R. G. Grant, and W. V. Hare, of special interest and merit.

NORTHEAST MEDICAL

Monroe County, once comprising most of northeast Mississippi, has produced Mississippi's largest oil well. Near Amory, it is on the old homeplace of the Bryan family, and Dr. G. S. Bryan, who has for years predicted oil for his section, relates that eighty-eight years ago he slept as a small child in the house occupied by the Snows, who now own the land on which the well was brought in.

But the oil of good fellowship, kindliness and an expanding spirit has always graced the Amory and Aberdeen medical meetings. The scholarly spirit of Dr. W. A. Evans still pervades the cultured little city of Aberdeen where the Northeast Medical Society held its quarterly meeting in September.

Guest essayist was Dr. Fred Strain from the Sanders Clinic in Memphis, his subject, "Differential Diagnosis in Jaundice." Papers by Drs. E. D. Parker, R. G. Hendrick, and T. W. Wesson augmented the scientific program, which was also attended by President-elect C. H. McCall of Gulfport, and Executive Secretary Rowland Kennedy of Jackson. Dr. McCall, on an official visit for the Association, brought greetings and discussed organizational agenda for the Association year.

ACS

During the five-day Clinical Congress of the American College of Surgeons opening Monday, October 5, in the Conrad Hilton Hotel in Chicago, at least a half dozen scientific investigators will touch on one experimental aspect or another of the intriguing problem of increasing the clinical possibilities of heart surgery by development of a technique of "deep-freeze sleep" enabling the surgical team to slow down, if not actually stop, the patient's breathing and circulation long enough to do live-saving work on the open heart. It is hoped this may be done successfully by refrigeration or by drugs reducing the patient's blood pressure.

PRIZE ESSAY ON CARDIAC SURGERY

The trustees of one of America's oldest medical essay competitions, the Caleb Fiske Prize of the Rhode Island Medical Society, announce as the subject for this year's prize dissertation "RECENT ADVANCES IN CARDIAC SURGERY". The dissertation must be typewritten, double spaced, and should not exceed 10,000 words. A cash prize of $250 is offered.

For complete information regarding the regulations write to the secretary, Caleb Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence 3, R. I.

BOUGHT ANY NEW MEDICAL BOOKS LATELY?

Your older volumes would be gratefully received by the physicians, hospitals, and universities of Israel. Especially needed are books in the following categories:

All Medical Specialties
Anatomy
Aviation Medicine
Bacteriology
Biochemistry
Biology
Chemistry
Dentistry
Endocrinology
First Aid
General Practice
Gynecology and Ob-

Mental Hygiene
Military and Naval Medicine
Nursing
Nutrition
Pathology
Personal Hygiene
Pharmacology
Physical Medicine
Physiology
Psychiatry
Psychology

stetrics
Hospitals
Industrial Medicine
Internal Medicine
Medical Dictionaries
Psychosomatic Medicine
Public Health
Surgery
Veterinary Medicine

If you can spare any of these books, in good condition and published since 1940, please send them by prepaid parcel post to:

Books for Israel
115 King Street
New York 1, N. Y.

NOTE: Up to 70 lbs. may be sent by parcel post, at 8c for the first pound, and 4c each additional pound, marked "BOOK RATE." Please give return address of individual or organization, so that your gift may be acknowledged. Funds for shipment from New York to Israel have been provided under Point IV, U. S. State Department, sponsors of this project.

Deaths

DR. N. S. GAY

Dr. Nathaniel Scales Gay, 76, prominent physician, died early today at his home in the Whistler community near Mobile. He had been ill for the past three years.

Dr. Gay was credited with delivering more than 1,000 babies before he retired 10 years ago. He received a certificate of distinction from the Alabama Medical Association in 1950 for 50 years' work as a general practitioner.

A native of Crawford, Miss., Dr. Gay was graduated from the old University of Alabama Medical School. He owned a pharmacy in Whistler, and had other business interests.

Survivors include a son, William Newell Gay; four daughters, Miss Jessie Mary Gay, Miss Frances Gay, Mrs. Frank E. Pendergast, and Mrs. Walter J. Smith, all of Whistler; and two sisters, Miss Sidney Gay. Starkville, Miss., and Mrs. Mary Herbert, Jackson, Miss.

DR. JOE EVANS

Dr. Joe P. Evans, 58, practicing physician and resident of Gulfport since 1927 and a former major league baseball player, died following an illness of several months.

Dr. Evans was born May 15, 1895, in Meridian, the son of Mr. and Mrs. Albert Evans. He was a graduate of the Meridian High School, the University of Mississippi and the George Washington University School of Medicine, St. Louis, Mo.

His baseball career came after he graduated from the two universities. He played seven years for the Cleveland Indians of the American League. He also played two years for Washington and two years for the St. Louis Browns. Dr. Evans played third base and outfield and was one of the originators of the "double steal" in baseball.

Between big league seasons, Dr. Evans interned at various hospitals in the East to finish his medical training, specializing in obstetrics. After his big league career he came to Gulfport in 1927 as player-manager of the Gulfport Tarpons in the old Cotton States League and later quit baseball and began practice as a physician and surgeon.

Dr. Evans began his practice with the late Dr. Charles LeBaron and was affectionately known among his patients and friends as Dr. Joe. He was a charter member and past president of the Young Men's Business Club; past president of the Great Southern Country Club; a member of the First Presbyterian Church; served with the Medical Corps in World War I; was a member of the Masonic Lodge, Scottish Rite and Hamassa Shrine Temple, Meridian; and the Gulf Coast Medical Association. At the University of Mississippi, where he was an outstanding football and baseball player, he was a member of Sigma Chi.

He is survived by his wife, Mrs. Mary Bliss Hewes Evans; one daughter, Miss Harriet Evans, Fairbanks, Alaska; one brother, Russell Evans, Meridian; four sisters, Mrs. Ada Rosseaux, San Antonio, Texas; Mrs. Marshall Haney, Meridian; Mrs. Henry Payne, Vicksburg; and Mrs. Leon Warren, New Orleans; six nephews, two nieces and several grandnieces and nephews.

DR. J. H. NEWCOMB

Dr. James Henry Newcomb, Sr., prominent Richton physician and father of United States Marshal Hugo Newcomb of Jackson, died suddenly at his home of a heart attack in Richton on August 30. He was 70.

Services were conducted from the Richton Baptist Church with the Rev. W. M. Averrett, pastor, officiating, with interment following in Mt. Vernon cemetery, Louin, Jasper County.

Dr. Newcomb was a member of the Richton Masonic Lodge and the Order of the Eastern Star He was a deacon of the Richton Baptist Church, was a charter member of the Richton Rotary Club, and was serving as a colonel on the staff of Gov. Hugh White at the time of his death. He had practiced medicine for 40 years, 31 years in Richton. Dr Newcomb was graduated from the Atlanta School of Medicine, Atlanta, Ga., in 1912.

He leaves his wife; three sons, Lamar A. Newcomb of Washington, D. C.; James Henry Newcomb, Jr., of Gulfport, and Rupert Hugo Newcomb of Jackson; two daughters, Miss Alice Joyce Newcomb of Shreveport, La., and Mrs. L. E. Taylor of Edcouch, Texas; two brothers, Luther B. Newcomb of Bay Springs and George Newcomb of Providence, La., and two sisters, Mrs. Jeff Hayden of Louin and Mrs. Henry James of Bay Springs.

CLASSIFIED

BARGAIN PRICE on Raytheon Console Microtherm Radar Diathermy, one year old, and-or Mobile X-ray Unit. Repossessed by bank. Write Box 48, Mississippi Doctor for facts.

WESTINGHOUSE 100MA X-ray Unit complete with darkroom. Doctor in Service. Perfect condition, installed, guaranteed. Equipment facts, literature, price gladly submitted. Al Vogel X-ray Co., 1114 Union Ave., Memphis.

PROFEX Mobile X-ray Unit, GE Table, Bucky, Complete Darkroom. Treatment room set, reception room set, delivery room table, representative instruments. Like new. Discount, reasonable. M. H. Cheshire, M.D., Somerville, Tenn.

NEW Drugs NEW Devices NEW Digests

ABSTRACTS FROM PEDIATRIC LITERATURE

Harvey F. Garrison, M.D.

Accidental Poisoning In Children — L. T. Chun, Honolulu, Hawaii M. J. 11:83-87, November-December 1951.

Over a period of five years, 221 cases of accidental poisoning were hospitalized. There were 3 deaths due to each of the following: kerosene, water color paint, and oil of eucalyptus. There were twice as many boys as girls. The age of greatest frequency was 2 years, followed by the age groups of 1½ years, 1 year, 3 years, and 2½ years.

Fifty-nine different poisons were encountered. The most frequent was kerosene (69 cases). More common ones were arsenic compounds, oil of eucalyptus, phenolphthalien, barbiturates, pine oil, salicylates, and camphorated oil.

The most common general treatment was gastric lavage. One hundred sixty-seven cases were so treated. In most instances, the exact amount of ingested poisons was unknown. The time interval before the patient was seen was usually one-half to one hour.

Kerosene poisoning is discussed in detail. The most frequent complications are fever, cough, pneumonia, vomiting and lethargy. No conclusions could be drawn as to the frequency of complications between those who were lavaged and those who were not.

COMMENT

The story told in the above article is a repetition of just what we hear from day to day in our practice. If we could only teach the mothers of the children of our country to be more careful about placing medicines, especially those that are poisonous, around where children can get to them, we would go places in the prevention of poisonings like this. Every doctor practicing medicine in any form should make it his business to caution mothers daily about such carelessness.

NEW PRODUCT: Pediatric Erythrocin Oral Suspension.

DESCRIPTION: Stable, ready mixed, Pediatric Erythrocin Suspension is a good-tasting cinnamon flavored liquid which remains potent at least 18 months. This selective antibiotic in suspension is especially recommended against staphylococci, streptococci, pneumococci and is less likely to alter the normal intestinal flora than other oral antibiotics except penicillin.

INDICATIONS: Especially advantageous in cases where children are allergic to penicillin and other antibiotics or where the infecting organism is resistant. Indications include otitis media, bronchitis, sinusitis, pharyngitis, tonsillitis, scarlet fever, pneumonia, erysipelas, pyoderma, certain cases of osteomyelitis and other infectious conditions.

DOSAGE: Recommended dosage is 2 to 3 mg./lb. (4.5 to 6.5 mg./Kg.) at four to six-hour intervals. Thus, for a 50-pound child, one teaspoonful every four to six hours. A 5-cc. teaspoonful represents 100 mg. of Erythrocin. Can be administered before, after or with meals.

HOW SUPPLIED: In 2-fluidounce bottles, by Abbott.

NEW PRODUCT: Mephenesin "Solubilized" with Salicylate.

DESCRIPTION: Each blue amber colored capsule contains:

Mephenesin	250 mg.
Sodium salicylate	250 mg.

Salicylates alone will benefit about 55% of patients. Combined mephenesin and salicylates, as in Mephosal, provides relief in over 70% of rheumatic cases.

ACTION AND USES: The skeletal muscle relaxant, mephenesin, with analgesic sodium salicylate acts promptly to relieve pain and spasm, and makes the patient more comfortable in rheumatic conditions—particularly in low back pain, arthritis, bursitis, sacroiliac strain, musculo-skeletal strain and trauma, postural musculo-skeletal abnormalities, stiff neck, night cramps, etc. No fear of blood dyscrasias or other serious toxic reactions.

ADMINISTRATION: 1 to 2 capsules every 3 or 4 hours, preferably after meals or with a little milk.

WHO MAKES IT: Crookes Laboratories.

NEW PRODUCT: Cortef acetate, ointment. Contains Cortef (hydrocortisone-compound F) Acetate, 25 mg. per Gm. (2½%), or 10 mg. per Gm. (1%) in a bland, nonirritating base.

WHAT IT'S FOR: Cortef Acetate, ointment, applied topically to the skin, exerts a rapid and prolonged anti-inflammatory effect. Local edema, hyperemia, cellular infiltration, and pruritus, particularly in allergic conditions, are readily controlled.

HOW SUPPLIED:

1% in 5 Gm. Tubes	$1.88
2½% in 5 Gm. Tubes	$3.77

WHO MAKES IT: The Upjohn Company.

WHAT IT IS: Furadantin, described as a valuable addition to the drugs available for treatment of urinary tract infections and as "particularly useful in the stubborn Proteus infections" by Dr. Grayson Carroll, associate professor of clinical urology, St. Louis University Medical School, in a report to the American Urological Association in St. Louis (on May 12, 1953).

Clinical studies of 79 patients on Furadantin therapy showed cultures of the urine to be negative in 53 cases. Proteus was the infecting organism in 10 cases, of which 9 were controlled. "The only untoward symptoms noted in patients administered the drug were nausea and, to a lesser degree, vomiting," Dr. Carroll reported. "Dizziness, headache, diarrhea, itching, parasthesia, often as side reactions with other drugs, have not been observed in patients taking Furadantin." The drug is the first of the nitrofurans designed for systemic use.

WHO MAKES IT: Eaton Laboratories.

WHAT IT IS: Risa, a radioactive iodinated blood albumin, a new research and diagnostic tool with clinical application in cases of burns and shock.

WHAT IT'S FOR: The compound provides a rapid yet reliable means of determining whether blood or other fluids need to be replaced in the body and how much solution should be administered. It is the first radioactive biological ever licensed by the National Institutes.

To make the diagnoses, the physician first injects the harmless radioactive iodo-albumin into the patient's veins and, a few minutes later, withdraws a blood sample. He then uses an ordinary Geiger counter to measure the radioactivity of the sample. This indicates how much the albumin has been diluted in the blood stream and, consequently, how much fluid needs to be replaced in the body.

Diagnostic uses of Risa also include detecting brain tumors from outside the skull and locating obstructions in the spinal canal. Radioactive iodinated albumin behaves exactly like normal albumin in the blood stream except that the radioactive iodinated particles are picked up at the site of tumors. The doctor injects the radioactive albumin into the vein and then moves his Geiger counter over the suspected area to measure the amount of radioactivity and thus locate the tumor or obstruction.

WHAT THE PRODUCT IS: Dilantin Suspension is a specially designed preparation of Dilantin particularly adaptable to the treatment of children.

WHO MAKES IT: Abbott Laboratories.

DILANTIN SUSPENSION

WHAT IT'S FOR: It is for the treatment of epilepsy, particularly grand mal or psychomotor seizures.

HOW SUPPLIED: Dilantin Suspension is supplied in 8-ounce bottles. The preparation contains 100 mg. of Dilantin (diphenylhydantoin) in each 4 cc. teaspoonful.

NEW PRODUCT: Pamine Bromide, 2.5 MG., with phenobarbital, 15.0 MG., Tablets.

WHO MAKES IT: Parke, Davis & Company, Detroit.

(Pronounced Dye-lan-tin Suspension)

PRODUCT: PAMINE

WHAT IT'S FOR: For use as an adjunct in the management of peptic ulcer and gastric disorders associated with hyperacidity and hypermotility; the postgastrectomy "dumping syndrome"; excessive sweating, and excessive salivation. It may also prove useful in the symptomatic relief of hyperemesis gravidarum and "functional" nausea and vomiting, ureteral and vesical spasms, acute nonspecific diarrheas associated with hypermotility of the gastrointestinal tract, and diarrhea associated with certain antibiotics.

ADMINISTRATION AND DOSAGE: The average dose is 1 tablet orally one-half hour before meals and 1 or 2 tablets at bedtime. However, as is the case with other potent anticholinergic drugs, there is marked variability in individual clinical response and tolerance to the side effects of the drug. The side effects are typical of the anticholinergic drugs, the most frequent being dryness of the mouth. Others such as blurred vision, constipation, disturbances of urination, etc., occur less frequently and may decrease with continued administration of the drug or decreased dosage.

HOW SUPPLIED: Bottles of 100 tablets $3.80

CAUTION: Federal law prohibits dispensing without a prescription.

WHO MAKES IT: The Upjohn Company.

NEW PRODUCT: Berubigen (Crystalline) 1000 micrograms per cc.

WHAT IT'S FOR: Massive doses of Vitamin B_{12} are being employed in the treatment of patients with pernicious anemia in relapse including those with combined systemic disease. A single dose of 100 to 1000 mcg. weekly for several weeks is used. Massive doses are also being employed experimentally in the treatment of such conditions as neurologic manifestations of diabetes (up to 900 or 1000 mcg. daily); in trigeminal neuralgia (1000 mcg. two or three times weekly); and for the symptomatic relief of osteoarthritis (30 to 900 mcg. weekly for three or more weeks).

HOW SUPPLIED: Vials, 5 cc. $8.25

CAUTION: Federal law prohibits dispensing without prescription.

WHO MAKES IT: The Upjohn Company.

NEW PRODUCT: Erythrocin, 1%, ointment (Erythromycin, Abbott), for treatment and prevention of pyogenic lesions of the skin.

INDICATIONS: Indicated against both primary staphylococcic and streptococcic skin infections and chronic dermatologic conditions secondarily infected with these organisms, especially Gram-positive strains which have developed resistance to—or are naturally resistant to—other antibiotics. Indicated in pyoderma, ecthyma, sycosis vulgaris, impetigo and as an adjunct to indicated surgical procedures in the treatment of paronychia and furuncle. Also dermatoses secondarily infected, including atopic, eczematous, contact, dermatophytosis, varicose and decubitus ulcers, surface burns and wounds, acne, otitis externa and scabies.

WHO MAKES IT: Abbott, in 1-ounce tubes.

NEW PRODUCT: Dextran 6% solution w/v in saline, plus venoset and needle set. A pyrogen-free, ready-to-use sterile intravenous solution of specially prepared dextran 6% w/v in isotonic sodium chloride solution. Does not require refrigeration and is stable under ordinary conditions of storage.

ACTION AND USES: For intravenous use to maintain plasma volume and blood pressure in the treatment of burns and shock states. Dextran aids in restoring circulatory dynamics to normal.

ADMINISTRATION: Intravenously at the rate of 20 to 40 cc. per minute. The usual dose is 500 cc., although the amount may be increased as the clinical condition requires.

WHO MAKES IT: Abbott.

A new medication for the treatment of peptic ulcer, Nulacin, has been released by Horlicks Corporation of Racine, Wisconsin.

WHAT IT IS: An entirely new idea in peptic ulcer therapy, nulacin produces continuous neutralization of gastric acidity, an achievement heretofore accomplished only by hospitalization of the patient and continuous intragastric drip therapy.

The nulacin tablet, prepared from milk combined with maltose and dextrins, provides magnesium trisilicate, magnesium oxide, calcium carbonate, and magnesium carbonate.

HOW GIVEN: For active ulcer therapy, the dose of nulacin is two or three tablets every hour, dissolved slowly in the mouth, beginning one-half to one hour after meals. This regimen leads to complete relief of pain and discomfort, and encourages rapid healing of the lesion. During quiescent periods, the suggested dose is two tablets between meals, beginning half an hour after each meal.

Hyoid Bone Syndrome*

LESTER A. BROWN, M.D.
Atlanta, Georgia

Not that it hasn't been noted before; not that I haven't noted it before; but in these years since World War II, I have paid more attention to a certain complaint, which, although sometimes vague, is accompanied by definite clinical findings, and completely lacking in pathologic evidence of disease. The frequency of this complaint has aroused my curiosity, and the lack of certified pathologic findings has prompted me to use the word syndrome, since, by definition, syndrome means "a complex of symptoms," or "a set of symptoms which occur together." Fortunately, the word does not require that one must erect explanatory foundation for such symptoms. Accordingly, I have attached to this symptom complex the name of the hyoid bone syndrome. From my records for these last two years, I have picked out sixteen case reports which come under this classification, but which does not necessarily represent the total.

Statistically, the symptoms occurred nine times on the right side, six times on the left, and one patient declared symptoms to be present on both sides. She is the only person whom I have seen who complained of bilateral hyoid bone symptoms. There were fourteen women and two men, one of the men being a physician. The ages of these patients varied from 29 to 70, the greatest number being between 50 and 60 years of age, where there were seven. I have never observed this in the colored race; however, I do not insinuate that it could not happen. These patients, often first seen by the family physician, are referred to the otolaryngologist because the pharyngeal level, which corresponds to the point of tenderness in the throat, is just below the tongue depressor line of vision. I shall use the pronoun "her," because in this syndrome, the female has thus far held an unquestioned numerical lead.

ANATOMY

The hyoid bone is a small, U-shaped structure, superficially placed in the anterior part of the neck between the thyroid cartilage and the floor of the mouth. It consists of a central body, two great horns, and two small horns. The great horns extend laterally and backward to the level of the anterior border of the sterno-mastoid muscle on either side. Each small horn arises at the junction of the great horn with the body, and is directed upward. The hyoid bone does not articulate with other bones, but is held in place by muscles and fascia. A pair of ligaments, the stylohyoid, are attached to the small horns. Many muscles are attached to this small bone from above and below, but no muscle crosses it, except the platysma, which I believe is not involved in this complaint. Some of the more important muscular attachments to the upper side of the hyoid bone are the geniohyoid, the mylohyoid, the hyoglossus, the stylohyoid, the chondroglossus, a fascial sling for the intermediate tendon of the digastic, and very important is the attachment of the middle constrictor muscle of the pharynx. Attached to the lower side of the hyoid bone are the strap muscles of the anterior part of the neck, those muscles which attach to, or pass over the thyroid cartilage.

The common fascia of the thyroid cartilage and the hyoid bone passes up, posterior to the body of the hyoid bone, and is attached to its upper surface, so that in the act of swallowing, when the thyroid cartilage is pulled up, the body of the hyoid bone is anterior to the upper border of the thyroid cartilage. On the anterior surface of this fascia, the so-called thyrohyoid ligament, there is present in the fat a bursa, which has for its function, the prevention of friction between the posterior surface of the hyoid bone and the upper border of the thyroid cartilage.

SYMPTOMS

The patient complains of pain in the throat at the anterior border of the sternomastoid muscle, about halfway between the angle of the jaw and the lateral extent of the thyroid cartilage (when the head is tilted slightly backward and the face is turned approximately halfway to the opposite shoulder). She notices the pain most when she swallows, she refers to the pain as being inside of the throat, but she locates the point of tenderness closer to the outside of the neck. Occasionally, the pain may be referred to the ear of the same side.

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*Presented before the Section on Eye, Ear, Nose and Throat at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Mississippi, May 10-13, 1953.

FINDINGS

On examination, it is found that the point of tenderness is always at the posterior end of the great horn of the hyoid bone. This can be found most easily by the following method: The body of the hyoid bone is located from the outside by palpating the neck in the midline, immediately above the notch of the thyroid cartilage. The palpating finger is directed laterally and backward over the course of the great horn of the hyoid bone on the unaffected side. The hyoid bone is moved toward the affected side, and, with the index finger of the other hand, light pressure is brought to bear on the posterior end of the great horn of the hyoid bone on the side of which the patient complains. Occasionally, the symptoms may be elicited by moving the hyoid bone from side to side, when it is grasped between the index finger and the thumb of the same hand. The tenderness does not extend medial to the midpoint of the great horn, and tenderness of the body of the hyoid bone has not been noted. At times, pressure over the tender point of the posterior end of the great horn of the hyoid bone may cause pain to radiate upward toward the ear on the affected side, however, this is not constant. There are no other related positive clinical findings.

Approximately 50 per cent of all patients, who complained of vague throat symptoms, were further examined by the roentgenologist. This examination consisted of making roentgenograms of the neck, in the lateral aspect, and a barium study of the esophagus by fluoroscopy, when the latter was indicated. No patient has been included in this group, if there was x-ray evidence of disease in the throat.

The clinical examinations do not reveal any pathologic realities. The lack of pathologic realities prevents the making of a diagnosis. The lack of diagnosis prevents the giving of specific treatment. The lack of specific treatment prevents good results from therapeutic measures. Such was found to be the case. The usual otolaryngologic procedures, such as spraying the nose and throat with commonly known medicines, mopping the pharynx with silver nitrate, weak or strong, and applying heat to the neck, were futile. The administration, by mouth, of salicylates, tolserol, and the antibiotics was quite as disappointing. Even osteopathic massage and chiropractic "adjustments" did not remove the discomfort, according to some of the patients who stated that they had taken matters into their own hands.

Confused with this symptom complex is a condition in which the pain is acute, more severe, tends to run a self-limited course, with or without treatment, and there may be low-grade fever. The point of tenderness here, as in the true syndrome, is at the posterior end of the great horn of the hyoid bone, but this pain almost always is referred upward toward the ear, with soreness in the muscles of the side of the neck, radiating down to the shoulder. There usually is, or recently has been, upper respiratory infection. The differential point between these two conditions is that pressure on the side of the neck gives pain in the muscles affected, in the acute condition, while there is no pain on general pressure on the side of the neck in the true hyoid bone syndrome. The acute condition is more of the nature of a crick in the neck. It is, in my opinion, a separate entity.

LITERATURE

Just as I was about to consider that this might be some fairly common, but hitherto undescribed symptom complex, there came to mind one of my favorite Biblical quotations, found in the latter part of the ninth verse of the first chapter of Ecclesiastes, which states, "and there is no new thing under the sun." I therefore sought aid from the medical literature. A search brought out two articles, one by Nelson,[1] "Hyoid Bursitis," and the other by Goldstern,[2] "Rheumatic Disease In the Region of the Hyoid Bone." These two reports were similar to each other in many respects, especially with regard to the causes and the treatments of the conditions which they described. Briefly, these authors stated that their clinical findings included a slight evaluation of temperature, possible swelling of the neck in the region of the hyoid bone, pain radiating into the shoulder of the affected side, and usually some obvious nearby infection in the pharynx, the mouth, or the gums. Most amazing were their results of treatment. They found that by the administration of salicylates, for three to five days, there was complete relief from symptoms in the majority of their patients, even in those patients who had been afflicted for a period of weeks or months.

Although there were several comparable findings in their and my clinical examinations, it appeared that they were describing an allied condition, but one in which some pathologic evidence of disease could be demonstrated, and one which responded to a relatively simple therapeutic measure. Their information, therefore, was not completely helpful in establishing a diagnosis of the syndrome as exhibited by my patients.

DIAGNOSIS

I received some clinical help on the occasion of seeing one of the two men of this series, the doctor, who had the complaint and the findings quite typical of hyoid bone syndrome. After talking with him at length, he stated that although he did not understand the mechanism of his pain, he did find that it was more noticeable with increased nervousness, that it had been present for a period of many years, and that, frankly, he was concerned as to whether there might be some malignant lesion in his throat.

That this symptom complex might be a result of a state of nervousness, in the category of globus hystericus, is a matter which had presented itself many times before; but this is a dangerous diagnosis to make at any time, and especially before all other possibilities have been carefully eliminated. Nevertheless, the lack of evident disease, the failure to respond favorably to the therapeutic procedures, and the fact that some of the patients had harbored their complaints for years without ill effect, caused this possibility to become the most likely diagnosis.

COMMENT

The question of what is the cause of this pain, or peculiar sensation, in the hyoid region of the throat, is as justifiable as it is unanswerable. It seems to me that three factors enter into the discussion. The first is that the hyoid bone is a central station for attachment for almost all of the muscles in the anterior part of the neck, and it is, therefore, a potent unit in swallowing. Most important, among these muscles, is the middle constrictor muscle of the pharynx, which attaches along the entire upper border of the great horn of the hyoid bone, and which also plays a significant role in swallowing. The second factor is that, normally, one is not conscious of any "feelings" in the throat when swallowing, and yet, if anyone should make it a point to notice these "feelings," she would notice that they are present. The third factor is that something first brings these "feelings" to the person's attention, such as the ephemeral toothbrush bristle or fish bone, the evanescent husk of corn, the transient sore throat. As this person palpates her own throat, she will come upon this central station of muscular attachment, which is more easily palpated when the head is turned slightly to the opposite side and tilted backward; furthermore, the "feelings" in the throat are more noticeable when the head is in this position. These symptoms and signs do not run a self-limited course, so the indefinite duration may become a precipitating factor for personal worry about the possibility of the presence of a serious condition, even though there has not been any ill effect upon the general health. She overlooks the fact that this complaint is not apparent when her attention is diverted.

TREATMENT

The therapy of choice depends upon assuring the patient that there is no obvious evidence of disease. Local treatment of the pharynx may be reasonable, as an adjunct, but it should not be used long enough to cause the patient to think that the doctor is depending on it for a relief of the symptoms. The antibiotics and chemotherapeutic agents are distinctly contraindicated. After the throat and the pharynx are most carefully examined, if then the physician can describe the course of her peculiar throat symptoms, locate specifically the point of tenderness, and truthfully state that he has not been able to find anything abnormal, the patient will disclose, as a rule, that the major cause for alarm is the fear of malignant growth. Further, she is more easily assured, if invited to return for a follow-up examination in six weeks. The patient who is seen and examined one time, and dismissed with a cordial slap on the back, and a merry "forget it," is most likely to be the patient who will forget the slap on the back, but who will go her way constantly remembering that to herself, she is literally a pain in the neck.

SUMMARY

1. The hyoid bone syndrome is a rather common clinical entity, which consists of painful symptoms, definitely located in the throat, for which an organic basis cannot be found.

2. From a review of 16 case records of patients seen over a period of two years, it is inferred that this syndrome occurs most frequently in middle-aged white women, and that the prevailing cause is personal anxiety over the possibility of there being a malignant lesion somewhere within the throat.

3. The most satisfactory therapeutic results have been obtained by minimizing local treatment, and by procuring the confidence of the patient to believe that the findings on clinical examination

are, in truth, those which have been made known by the doctor.

4. As in other conditions of "peculiar feelings" in the throat, such as *globus hystericus*, a final explanation of the *modus operandi* is not presently available.

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137 Doctors Building

Intestinal Obstruction*

J. T. THOMPSON, B.A., M.D.
Moss Point, Miss.

As physicians we all strive for one goal, that is, the most efficient and effective means of correcting the ills of our patients. Although devious the routes leading to this goal, ultimately, by reviewing past records of ourselves and our predecessors, we emerge with facts and figures, not always encouraging, but beneficial in every case when properly interpreted and applied. May this profession ever have the wisdom to profit by its mistakes and change to better methods when they have been proved and presented. May our attitude not be that of some governments and their leaders who have never learned anything from history, or acted on principles deducted from it.

In this discussion I should like to consider, especially, that portion of the intestinal tract from the ligament of Treitz to the ileocecal valve, and call to attention some interesting figures on the consistent reduction in mortality in treating small bowel obstruction, as well as present again several important features tried by some of our colleagues and found beneficial.

All of us will agree it is unwise to dismiss as being of little significance, a patient who presents himself with ill-defined abdominal pain—whether intermittent or constant—accompanied by nausea and vomiting, plus the presence of bowel sounds, a history of bowel movements, and previous abdominal surgery. Having been warned by such symptoms, one must think of partial or complete intestinal obstruction, for it is at this stage of the process that intubation as a definitive measure has its greatest value; and conservative treatment may be all that is necessary.

To be sure, the diagnosis is easily made when we wait and watch for distention and x-ray evidence of dilated loops of small intestines, with or without fluid levels; but the treatment is just as surely more difficult, and more radical means will most likely be necessary for correction. It is here that dependence upon intubation as a corrective measure for too long a period of time yields an appallingly high mortality, as will be pointed out later.

We may classify[1] the obstruction lesions simply as external and internal. The former make up about forty per cent of the lesions and are brought about by the protrusion of the intra-abdominal contents through a congenital or acquired defect in the abdominal wall. When left to complete obstruction, they become irreducible. Of this group, ventral, inguinal, and femoral hernias are most often the offending lesions. The latter group comprises the lesions growing within the abdominal cavity such as: adhesions, bands, internal hernias, volvuli, intussusception, congenital malrotations, and intrinsic lesions of the small intestines, such as: nekoplasms, benign tumors, gall stones, or other foreign bodies.

When one is confronted with the problem of an early diagnosis in case of an external obstruction, a decision may be readily and easily made. Any change in an external hernia[2] is quickly noticed by the patient and appreciated by the examining doctor: for example, a previously reducible hernia becomes irreducible; is associated with pain; firmness; anorexia, nausea; and vomiting. Furthermore, there is an increase in pulse rate and, usually, an elevation in temperature. In the case of a previously irreducible hernia that has become strangulated, the same symptoms apply.

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*Presented before the Section on Surgery at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

An early diagnosis of internal bowel obstruction is more difficult, and its recognition must be early if treatment by non-surgical means is to be helpful. Early in the process the picture may be classical; that is, intermittent peristaltic pain increasing in frequency and severity, followed by nausea and vomiting. However, in some cases only a few hours after the onset, the patient may become comparatively free of symptoms and the nature of the condition not appreciated until the abdominal pain, distention, and vomiting reappear.

In late internal bowel obstruction the diagnosis is easier. We now have a critically ill, vomiting patient, with dehydration and marked distention. If the obstruction is low in the ileum, the distention is more pronounced. Vomitus is fecal in character if the process has been present for three to five days; and there is x-ray evidence of distended loops of small intestines, with multiple fluid levels, and, obviously, a fluid and electrolyte imbalance.

Next, having made the diagnosis of obstruction, a try must be made to discover whether it is high or low.[2],[3] It is complete or incomplete, simple or strangulated; and, of great importance, is it in the right colon? An attempt to answer all these questions should be made because such an answer will greatly aid in the determining of the method of approach to the problem.

The degree of distention will be greater in the lower obstructing lesions; and, if high in the ileum or jejunum, vomiting is copious: as much as five to twelve liters of fluid—salivary, gastric, biliary, pancreatic, and duodenal secretion may be brought up in twenty-four hours, thus, in short order, producing a fluid-electrolyte imbalance.

Dr. Wangensteen[2], in his book on the subject, points out the fact that considerable gas in the small bowel, and the presence of gas in the colon on x-ray films, after an evacuant enema, indicates incomplete small bowel obstruction; and the absence of such gas in the colon leads one to conclude complete obstruction.

Intermittent cramping, abdominal pain without tenderness point to simple obstruction; while intermittent cramping pain accompanied by abdominal tenderness leads one to suspect a strangulated obstruction. I wish it were as easy as this, but a review of cases treated at the Jackson County Hospital—and this fact is borne out in the literature—showed that as many patients with simple obstruction exhibited tenderness as those with strangulating variety. Nor could I distinguish the simple from the strangulated obstruction by the leukocyte count or the temperature chart. My personal opinion is that we should not quibble over this point, for be it simple or strangulated, operation is in order.

If a cecal distention can be demonstrated by x-ray, we may suspect a right colic lesion. If such a lesion is suspected, but not demonstrated, a barium enema may be given[3] and the possibility of the obstruction's being in the right colon thus ruled out by x-ray.

Intubation in small bowel obstruction has a place; and, in many instances, is all that is necessary. It has been suggested that the term "small bowel distention" be used as it describes better the type of condition in which intubation as a definitive measure is particularly indicated. In general use today are three long intestinal tubes:[4] the double lumen Miller-Abbott tube, introduced in 1933; the single lumen Harris tube, introduced in 1944, and the Cantor tube introduced in 1945 In the event a case is selected for treatment by intubation, how long should we wait? Again it is my personal opinion, that forty-eight hours without definite improvement is the limit, and operation is then in order. Intubation properly used will decrease mortality; but when improperly used, that is, when dependence is put upon it for the solution for too long a period; and the patient is thus allowed to become dehydrated, distended, and imbalanced in his electrolytes, mortality will be greatly increased.

Dr. Walter F. Becker[5] in an analysis of 412 cases of intestinal obstruction gives some interesting figures on the mortality of those treated by tube decompression. Group one is made up of patients treated by tube decompression for at least twelve hours. At operation strangulation was found, which produced a mortality of twenty-five and five-tenths per cent. Group two, treated entirely by tube decompression, were found at autopsy to have had strangulated obstruction. This group yielded a mortality of one hundred per cent. Group three was made up of patients initially in good condition who were treated by prolonged tube decompression and finally operated upon for simple obstruction with a mortality of one hundred per cent. Therefore, intubation, a good measure, has its limitations and is obviously not to be depended upon for strangulated obstructions of the small gut or any obstruction of the large bowel. Where the line is to be drawn, each must be his own judge. Our success will be much greater, however, if we do not wait too long before operating. From what I have been able to observe, intubation as a treatment produces best results and is safest to depend upon in small bowel distention associated with simple adhesive obstruction, or with certain medical conditions.

None of us can deny the importance of preparation for any operation, and especially is this true for an obstructed patient. All of us have had experience with this problem; the literature abounds with information on the subject; and the application of the knowledge has had a great influence on the reduction in mortality. Please allow me to emphasize as being of the utmost importance the use of fluids in the form of glucose, normal saline, plasma, transfusions, together with tube decompression, followed by operation as soon as possible, and administration of chemotherapeutic and antibiotic drugs when thought necessary.

In most cases the anesthetic used by the staff of Jackson County Hospital is induction by means of pentothal sodium and continuance on a gas-oxygen-ether mixture in a closed machine. This does not apply to the extremes of life where drop ether or ether-oxygen mixture is employed. Rarely if ever is a spinal used. However, the choice of anesthesia must be left to the discretion of the surgeon and the attending anesthetist.

The technique of the operation will not be discussed except to say that oblique end-to-end anastomosis seems to be the one of choice.[3] I am sure that it is better to leave the selection of the method to be used up to the surgeon as no one procedure is applicable to all the situations which will demand small bowel resection. I want to bring to your attention, however, the recommendation made by Dr. Mahooner[6] in a paper discussing the operation for massive adhesions, "matting syndrome". Dr. Mahooner advises the removal of the entire omentum as well as the resection of the bowel at all points of severe adhesion, angulations, and, of course, any portion that appears to be non viable. I should like to state that in any operation where there are massive adhesions of the omentum to the abdominal wall and other organs, it is a good procedure to remove all the omentum as a measure in preventing subsequent adhesions and obstructions.

A significant fact presented by Dr. Hugh A. Gamble[7] is the importance of obstructive interostomy in conjunction with resection of small bowel at a point proximal to the anastomosis or previous obstruction. This is in order to prevent the content of the obstructed bowel from entering the healthy portion of the intestinal tract. The mortality in ninety-nine cases reported by Dr. Gamble was three per cent, the lowest I have found in the literature. Let us keep in mind Dr. Gamble's suggestion as being especially indicated when obstruction has been present for several days.

Dr. Walter F. Becker[8] in a paper yet unpublished gathered figures from Charity Hospital, New Orleans: from 1925 to 1929 mortality was 65 per cent dropped to 15 per cent from 1945 to 1949. These figures prove that great strides have been made in reducing mortality in acute small bowel obstructions. We can attribute this improvement to better preparation of the patient by means of tube decompression, replacement of fluids and electrolytes, early operation, and administration of antiobiotic and chemotherapeutic drugs.

SUMMARY:

1. Small bowel obstruction classified.
2. Diagnosis, location and types of obstruction discussed.
3. Intubation, uses and abuses called to attention.
4. Some operative recommendations by our colleagues brought out.
5. Improvement in mortality shown by figures Charity Hospital, New Orleans.

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DISCUSSION

Dr. D. L. Hollis (Biloxi)—In thumbing through the literature on intestinal obstruction I found that some of the greatest advancements in surgery have been made in this subject and much progress has been made from the day of "lock bowel" to the present methods of treatment of intestinal obstruction. It remained for Wangensteen, Miller, and Abbott to establish the cardinal principles in treating intestinal obstruction, namely, intubation, fluids and transfusions and oxygen. These measures alone have greatly reduced the mortality.

Paul Nemir of the University of Pennsylvania from 1940 to 1950 reports 430 cases with ages ranging from three weeks to 80 years of intestinal obstruction in which he lists 10 causes, the first three being adhesions, hernia and malignancy, these conditions causing 84 per cent of the obstruction and in that group of simple obstruction there was a mortality rate of 9 per cent and in cases of gangrene there was a mortality of 31 per cent and in the gangrenous cases the use of penicillin and other antibiotics appeared to have no influence on the outcome. Nemir further states that after 40 hours you are almost sure to have gangrene.

May I further quote from Becker, to whom Dr. Thompson has referred, who reports 412 cases in Charity Hospital in New Orleans from 1940 to 1949 in which he says "Intestinal obstruction caused by recent adhesions usually responds to conservative measures such as intubation, etc., whereas when due to old adhesions nearly always requires operation." He also says, "Conservative measures should not be employed for longer than 40 hours. In this group intubation and operation together were required in 61.6 per cent, intubation alone in 27.9 per cent and operation alone in 8.5 per cent."

Post-operative obstruction must be strongly suspected when you have rhythmic pains with vomiting and progressive abdominal distention which is not relieved by enemas. Fecal vomiting usually represents a late stage and possibly gangrene, x-rays in the standing position nearly always confirm your diagnosis. Conservative measures here too should be employed for only a reasonable length of time and if this fails one should resort to the necessary surgical means.

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WHAT HAPPENS TO ALCOHOLICS

N AN ATTEMPT to learn the eventual outcome of alcoholic patients, Lemere collected and analyzed information concerning 500 deceased alcoholic individuals. This information was obtained from various patients who were children, grandchildren, nephews, or nieces of the alcoholics. Antecedent relatives who were considered by the family to have been heavy but not problem drinkers were not included. Since the survey covered two preceding generations, who lived when treatment was very limited and seldom sought, the series is essentially a control study of what happens to untreated alcoholics.

It was found that of the group of 500 alcoholics, 28 percent (142 patients) died directly or indirectly from the effect of alcohol through violence or illness. Over the years their drinking history became worse. In 29 percent, the drinking continued essentially the same throughout their lifetimes.

About 22 percent of the patients stopped drinking during the course of a prolonged terminal illness.

On the other hand, in 10 percent (forty-nine cases), the drinking gradually became more moderate, until at the time of death, alcoholism had not been a serious problem for many years. In over three-fourths of this group, moderation was characterized by increasingly longer periods of sobriety.

Significantly, an additional 11 percent stopped drinking permanently and exclusive of a terminal illness. The majority of this group were over the age of forty-five. About two out of three subjects achieved abstinence entirely on their own. The other third responded to religious conversion, single or group psychotherapy, or treatment by a conditioned reflex technic.

It is important to recognize that 8 percent of the entire group stopped drinking for three years or longer only to relapse at some later date.

Some of the interesting data obtained from the study reveal that 6 percent died in a psychotic state, 19 percent were divorced, and 5 percent died derelict. The average longevity of these alcoholics was fifty-two years. A high percentage (16 percent) lived to age seventy-five or over, but 12 percent died under the age of forty.

Although one should not draw positive conclusions from information based on hearsay, and although many more questions are raised than are answered by this study, this type of information is precisely what is needed before the true effectiveness of the medical treatment of alcoholism can be evaluated.

Physicochemical Stress in the Production of Disease

G. C. FURR, M.D.
Clarksdale, Miss.

One way of defining life is as an orderly functioning of enzymes. Disease manifests itself as a disorder, inhibition, or hyperfunction of enzymes. Enzymic reactions and the quantitative determination of enzymes are acquiring more and more importance in clinical medicine. Enzymes are reported to be very complex substances but they can be readily understood when you consider that an enzyme is an organic substance which contains essentially a mineral, a vitamin and a specific protein. It also may contain a mineral, a hormone and a specific protein; or it may be a combination of minerals, vitamins and hormones with a specific protein. A change of any one of these factors changes the character and function of the enzyme. In general, these enzymes control all of the chemical reaction of the body.

Minerals, vitamins and amino acids work together within a single cell to produce enzymes. There are hundreds of enzymes within a single cell and they control directly or indirectly all of its chemical actions. Within the confines of cells many enzymes are at work all the time, and every one of these cells is constantly producing more than a thousand chemical compounds, if the raw materials are available for such synthesis. The harmony of nature in this cell activity is necessary for health and prevention of disease.

In the living cell, the enzyme is constantly under the influence of all of the factors acting at once and it is difficult to attribute a change in activity to any single influence. There are at least eight separate factors that affect the activity of a given amount of enzyme. These factors are: temperature, substrate concentration, coenzyme concentration, hydrogen ion concentration, inhibitor concentration, oxidation-reduction potential, ionic strength.

Stress, or threatened stress (emotions, exercise, cold, burns, infections, drugs, etc.), acting either directly from the brain or reflexly through the autonomic nerves, stimulates certain sympathetic nuclei of the hypothalamus—the alarm reaction. The sequence of events seems to be: 1) damaging event, 2) by some means the hypothalamus is stimulated, 3) the impulses travel to the anterior pituitary and result in the release of adrenocorticotrophic hormone, which 4) releases a large amount of adrenal cortical "sugar" hormone; 5) this initiates changes in the body in the direction of preventing the systemic anabolism of tissues. At the same time the "sugar hormone" causes a breakdown of lymphoid tissue with a release of immune globulins which help to combat the damaging event if it is an infection. The interference with anabolism of protoplasm floods the system with all manner of building materials for the anabolism of protoplasm, and these materials are thus made available in large amounts to the site of injury. It is postulated that at the site of injury there is a local stimulating factor which is able to override the general systemic effect of the "sugar" hormone and induce a maximal amount of tissue regeneration. After this "catabolic" phase the patient passes into an "anabolic" phase, during which there is a marked anabolism of tissues in all parts of the system as well as in the local site of injury; this continues until the convalescence is completed. In the "anabolic" phase there is no longer an excess of "sugar" hormone, but instead there is an excess of "nitrogen" hormone.

According to Selye, the individual passes through a succession of steps or phases. First he goes through the shock phase, and then the countershock phase, both of which together are known as the "alarm reaction". After this he goes through a stage in which his resistance to the same type of damaging event is much greater than it was before, but during which his resistance to other types of damaging events is much lowered; and, finally, if the damaging event is continued, he enters a stage of exhaustion and ultimately dies, or, if the damaging event is terminated, enters a stage of convalescence and eventually recovers.

Thus the sequence of events in the "adaption syndrome" can be amplifed as follows: The large amount of the "sugar" hormone which is released inhibits the "nitrogen" and the "desoxycorticosterone-like" hormones; this prevents the systemic accumulation of protoplasm and of extracellular fluid. When the excess production of the "sugar"

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*Presented before the Section on Hygiene and Public Health at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

hormone ceases and the inhibitory activity disappears, the "nitrogen" and the "desoxycorticosterone-like" hormones are produced in increased amounts which stimulate the systemic anabolism of protoplasm and the reestablishment of electrolyte and water equilibrium during the period of convalescence. The concept of the "adaptation syndrome" provides another addition to the homeostatic mechanisms which are set in motion in an effort to maintain the most optimal conditions in the individual.

When the concept of the "adaptation syndrome" is applied to clinical medicine, it follows that there is an endocrine component in the manifestations of all disease conditions. Certain acute fulminating infections are usually associated with a profound "alarm reaction." An example of this is infection with meningococci, in which such severe demands are made on the "sugar" hormone production by the adrenal cortex that the gland breaks down with hemorrhage and destruction; this is the Waterhouse-Friedrichsen syndrome.

Many disorders of adaptation occur during the 'catabolic" phase of the "adaptation syndrome." In a group of human disease conditions, lesions are present which are similar (if not identical) with the pathologic changes that can be induced in animals by the administration of large doses of desoxycorticosterone, and as a result the suggestion has been advanced that in man these disease states arise because of the excessive production of the "desoxycorticosterone-like" hormone by the adrenal cortex. These disease conditions include particularly disturbances in the cardiovascular system, such as periarteritis nodosa, rheumatic diseases such as rheumatoid arthritis and rheumatic fever, hypertension, and renal arteriolar diseases with nephrosclerosis.

Other human disease conditions in which the evidence suggesting an increase in the production of the "D O C"-like hormone by the adrenal cortex is less clear, but respond to ACTH and cortisone. These include disseminated lupus erythematosus, diffuse collagen diseases, dermatomyositis, scleroderma, psoriasis and psoriatic arthritis. pemphigus, gout, acute nephritis, chronic nephritis, nephrosis, status asthmaticus, bronchial asthma, allergic rhinitis, atopic dermatitis, drug hypersensitivity, and other allergic states, ulcerative colitis, myasthenia gravis, acute alcoholic intoxication, certain hypersensitivity, and other allergic states, ulcerative colitis, myasthenia gravis, acute alcoholic intoxication, certain psychiatric states, and certain acute infections.

In some disease conditions, however, the administration of ACTH or of cortisone has either produced no effect or possibly made the patients worse; these include viral hepatitis, tuberculosis, poliomyelitis, certain chronic neurologic disorders, and certain psychiatric states.

Now that the reaction of the body to stress has been reviewed I would like to present a few short reports that are significant to clinical conditions observed in recent years.

ACTH given to normal adults for one to three weeks the secretion of free hydrochloric acid and pepsin of the stomach juice is greatly increased, 200 per cent to 300 per cent. The volume of gastric secretion was not increased, but the concentration of these active substances. Gastric ulcer is an important part of the alarm reaction, and repeated administration of ACTH simulates the condition of chronic stress.

Recognition of the specific stimulating effect of ACTH and cortisone upon the stomach may provide some help in understanding of pernicious anemia and the clinical achlorhydrias. Increased adrenal activity probably accompanies or precedes clinical ulcer, and ulcer therapy should include attempts to decrease the activity of the adrenal cortex. Patients with sprue are reported to have adrenal cortex insufficiency.

Disturbances of fluid and electrolyte balance continually confront the clinician in many diseases. The changes which these disorders produce may account for many of the symptoms which the patient exhibits. Metabolic derangements associated with disease processes and frequently observed in diabetes mellitus, chronic nephritis, pyloric obstruction and diarrheal diseases are usually well recognized. However, alterations in electrolyte structure based primarily on respiratory dysfunction are less common, and therefore, too often go undetected. Hyperpnea causing respiratory alkalosis might easily be confused with compensatory Kussmaul breathing of metabolic acidosis.

Any alteration in the ability of the lungs to eliminate carbon dioxide properly will produce respiratory acidosis or alkalosis. The underlying abnormality in respiratory acidosis is an increase in blood carbonic acid, which follows elevation of carbon dioxide in the pulmonary alveoli. This may result from: 1) breathing air containing abnormally high percentages of carbon dioxide; and 2) conditions in which elimination of carbon dioxide through the lungs is retarded. This group includes: bronchopneumonia; pulmonary congestion; pulmonary emphysema; morphine narcosis;

poliomyelitis; convulsive apnea; pulmonary fibrosis; and laryngeal obstruction. Pulmonary edema caused by toxic irritants or infection may also be included.

Respiratory alkalosis may result from any condition in which hyperventilation occurs as a primary manifestation. Clinically, it is observed in poisoning, meningitis, encephalitis; and hyperpexic states, all of which may exhibit overbreathing due to stimulation of the respiratory center. Other causes are hysteria, and high altitudes. Regardless of etiology, the basic derangment is reduction of alveolar carbon dioxide tension followed by decrease in blood $HHCO_3$. Therefore, plasma pH is raised, unless B. HCO_3 is reduced proportionately. The latter is accomplished by the following mechanisms: 1) excretion of alkali. Alkali in the form of bicarbonate is excreted in the urine early and in small degree unless other changes such as ketosis cause continued excretion; 2) decreased acid elimination; 3) retention of acid metabolic products (ketone bodies accumulate in the blood and ketonuria may occur); 4) retention of chlorides (blood chlorides are maintained at normal or raised levels); 5) decreased ammonia formation (This enhances elimination of base).

Recent investigations in Chile upon the effect of cortisone upon experimental mouse tumor metastasis are clear cut and capable of throwing light upon the entire problem of tumor development. The South American workers report that in more than two hundred routine transplantations of a mammary adenocarcinoma in a particular strain of mice, no metastases occurred. Local growth of this tumor was inhibited by cortisone. However, inhibition of the local growth was accompanied by the appearance of multiple metastases.

Various reports recently have described methods of increasing the susceptibility of the common small laboratory animal to a number of bacteria formerly considered non-pathogenic for them. Minneapolis workers have increased the pathogenicity for white mice of several species of microorganisms, by a combination of two therapeutic agents, x-radiation and cortisone. The two administered twenty-four hours before experimental inoculations, considerably enhanced the lethal effects of poliomyelitis virus, a Coxsackie virus, Candida albicans, and Blastomyces dermatitidis. There seemed to be a synergistic effect. The authors believe that susceptibility to many other organisms can be increased by the same technic, and suggest that they have here a method applicable to study of many diseases, a source of much new bacteriologic information, and a method of study of the phenomena of susceptibility and resistance.

Another technic has been described of shortening the incubating period before onset of paralysis in experimental poliomyelitis, and thus presumably increasing the virulence of the infection. According to Milzer, Weiss and Vanderbloom, pertussis vaccine, diphtheria toxoid, or Salmonella typhimurium vaccine, can significantly decrease the incubation period before onset of paralysis in mice infected with the Lansing strain of poliomyelitis.

Depressed cerebral function is a major complication of excess accumulation of thiocyanate. H. J. M. Barnett, M. V. Jackson and W. B. Spaulding report on eight patients presenting problems in the diagnosis of confusional psychosis. Two died, one of brain stem edema and the other of hyperthermia consistent with a similar lesion. Thiocyanate is a dangerous drug unless patients are closely observed for toxic manifestations and serum levels are estimated frequently.

Thiocyanate effects in hypertensions are less dependent on quantitative dosage than on individual blood levels of the drug. Toxic reactions result from accumulation of the drug. Lowering of the basal metabolism rarely to myxedematous degree, improved renal tubular function, and nerve tissue and smooth muscle responses suggest an influence of the anion—SCN on hormonal equilibrium, involving especially the thyroid, pituitary, and adrenal cortex. Decreased thyroid activity, increased amino oxidase enzyme which destroys adrenalin and non-adrenalin at sympathetic nerve ending.

H_2S and thiocyanates inhibit the enzyme carbonic anhydrase which is found in RBC and responsible for acceleration of release of CO_2 in lung production of H HC1 in stomach, and secretion of alkali by pancreas. Also present in gray matter of corde medulla and pons (areas attacked by polio).

Guillain-Barre syndrome, or infectious neuronitis is characterized by degeneration of the myelin in the peripheral nerves, spinal ganglia, cord, and brain stem. The main causative factor is not known, but evidence suggests that it is due to a disturbance of the enzyme systems of the neurons.

As the viral particles break down, many liberate toxic components, which must be chemical substances, and which interfere with nutrition or respiration in the host cell.

Hydrogen sulfide occurs in sewer gas, in chemical industries and laboratories. It acts as local irritant. Even high dilutions produce conjunctivitis and roughening of the cornea, and keratitis with blebs and ulcers. More concentrated gas, especially with prolonged exposure, causes irritation and pulmonary edema. In acute poisoning, violent systemic effects predominate, mainly in stimulation of the respiration and spinal convulsive centers; and with higher concentrations, in direct paralysis of the respiratory center. Hydrogen sulfide is much more toxic than is commonly realized. It approaches hydrocyanic acid in toxicity and rapidity of action.

In December, 1952, a four-day fog in London caused about 4,000 deaths. The highest concentration of smoke was 4.46 mg. per cu. m. and SO_2 1.399 p.p.m. The *Merck Index,* sixth edition, contains the following: "Hydrocarbons, halogenated: carbontetrachloride, chloroform tetrachloroethylene, etc. Warning: Hazardous vapor. These compounds form phosgene in contact with flame or hot metal."

DDT is reported to have a veratrinic action and is thought to affect the sympathomimetic nervous system. Carey and his group have found demyelination of peripheral neurons and acute atrophy of 10 to 30 per cent of the muscle fibers in rats poisoned with DDT. DDT inhibits rat heart cytochrome oxidase in concentrations of 3 to 30 p.p.m. in substrate. Toxephene is suspected to have the medullary excitant effects of camphor—circulatory and respiratory stimulant.

The following is the second in a series of general reports on select aspects of pesticides. It is prompted by the growing general concern over the efficacy and safety of electric vaporizing units for the dispersion of insecticides within buildings. Proponents of this method of insect control claim that it is superior to other available means because of its greater convenience, efficiency, and freedom from danger as compared with more conventional methods, such as hand spraying of insecticides. Others have felt that sustained exposure on a workday or longer basis is intrinsically unsound because little is known about the effects of long-term exposure to low concentrations of insecticides in the atmosphere. While brief or occasional exposure appears to be harmless, it is not reasonable to expect that human beings can avoid injury for longer periods year after year to a toxic agent in atmospheric concentrations that kill insects in a few hours. It is further advanced that the resultant injury may be cumulative or delayed, or simulate a chronic disease of another origin, thereby making identification and statistical comparison difficult or impossible.

A high level of cyanide is present in the blood sera of multiple sclerosis. I have noted clinical evidence of cyanide toxicity and an abnormal secretion of thiocyanates (the detoxification product of cyanides)' in a large number of patients since the fall of 1949. An allergy is produced when there is an excess release of histamine. Histamine causes increased permeability of the intestinal wall of the large intestine allowing penetration of toxine into blood stream. There are close connections between substrates and inhibitors of diamine oxidase in carbohydrate metabolism. Recently more detailed information about these relationships was obtained by showing that histamine inactivates adenosinephosphatase (ATPase). It is possible, therefore, that DO and its inhibitors (thiamin, pyridoxamine) by regulating the concentrates of histamine and other polyamines, may influence the turnover of ATP, which plays a central role in carbohydrate metabolism.

Any defect in the biochemical processes of the brain, especially those concerned with energy transformations, may make itself known by alterations in cerebral function, including personality changes which may be neurotic or psychotic in character. The production of psychotic reactions with ACTH and cortisone invites further study. These hormones disturb enzymatic reactions by altering the electrolyte and water patterns of the body, thus changing the physicochemical environment in which the various enzymes must operate.

Very little attention has been paid to the miliary diseases of arc welders. This condition is a siderosis due to exposure to fumes rich in iron oxide.

Beryllium inhaled as an insoluble oxide in dust form, may also produce a disease characterized by progressive pulmonary granulomatosis. History of exposure is often difficult to establish since the dyspnea, cough and weight loss may be delayed for years after the last contact. And then the signs can be mistaken for silicosis, tuberculosis or sarcoid. Symptoms may be severe with relatively minor roentgenographic findings. Findings may precede symptoms by many years or may not be seen until after the onset of symptoms. Some clays are thought to contain beryllium.

The function of Nissl's granules of bodies described in any textbook of anatomy or physiology is for the purpose of storing up nervous energy which can change with fatigue or rest of the nervous system. These granules are often deficient or absent in the various exhausting diseases or in conditions which have produced bodily fatigue. Nissl's bodies are numerous in the cortical cells when they are at rest; they are also found in the sympathetic ganglion cells. These granules disappear during fatigue or after prolonged stimulation of the nerve fibres connected with the cells. With rest they again return to their normal size. That these bodies are responsible for oxygen metabolism in the cell is a known fact.

ACTH reduces the serum ion, possibly shifting it to the reticulo-endothelial system.

Recent evidence indicates that anoxia may play a role in the etiology of retrolental fibroplasia, the blinding disease that has been taking a rising toll among prematures.

Dyspnea on exertion, tachycardia, edema of the extremities, anginal pain, palpitation and syncope—are symptoms of inadequate supply of oxygen to the different vital areas of the body.

Environmental conditions which subject the body to acute stress cause an increased liberation of ACTH from the pituitary. Excess ACTH causes loss of phosphorous and induces abnormal calcification. The loss of nitrogen in the urine following the administration of cortisone may arise from either accelerated breakdown of body protein or the inhibition of synthesis of tissue proteins from amino acids, which precursors then accumulate and are excreted by the kidney. Administration of cortisone to rabbits inhibits the production of antibodies.

Physiologic trends observed in those exposed to chemicals, being non-specific, may well be produced by any form of physiologic stress. It is important to realize that there is no great difference between the results of continued exposure to chemicals in intensities short of those causing acute organic injury, and the results of prolonged exposure to cold, to lack of oxygen, or to excessive physical labor, or, indeed, to the early stages of infectious or metabolic diseases. Even when we pass from the stage of functional changes involved in the "adaption syndrome" to a state of actual organ damage, there is really no fundamental difference between the damage produced by chemicals and that caused by other types of disease. A chemical, like an infecting organism, may select one organ for its most pronounced action. Often it is more selective than the infecting organism, but the pathologic changes produced do not differ fundamentally from those already noted in infectious diseases. However, since, even in obvious poisoning, the functional derangements produced by the chemical are still important, injudicious chemotherapy may be harmful in chemical poisonings to an extent which we are all apt to overlook when, in infectious diseases, we aim to destroy the infecting agent.

By application of the biochemical principles and the reaction to stress, exposure to chemicals may effect body functions either directly or indirectly, thus producing diseases of stress, functional, and metabolic disorder thereby increasing susceptibility and lowering resistance to infection.

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MEDICAL PLACEMENT SERVICE

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The Civic, Religious and Moral Obligations of the Medical Profession to the Community*

REV. MARC C. WEERSING†
Jackson, Miss.

ONE OF THE esteemed doctors of this state remarked, "Strange things are happening when they ask a preacher to speak to a group of doctors, and at the same time, ask a doctor to lead in prayer in the session that the preacher speaks. *It would be a doctor praying for a preacher,* which isn't too customary." However, I am grateful for the invitation, though I feel very much as a Hollywood actress must have felt after one of her experiences. She was insisting on her authority in this incident:

The actress was on a trans-oceanic tour. On the deck of the ship she met a kind elderly gentleman. She engaged him in a conversation, and by her disposition toward him, obviously showed a desire to make an outstanding impression. After all, she was beautiful, quite attractive and very successful in her profession. After having out-talked him for a while, he accepted her invitation to play a game of shuffleboard. She conquered again! Full of the sense of her own accomplishment and quite puffed up by her own prowess, she ventured into further conversation. She said, "I have noticed that you are suffering from a severe cold. Now I'm going to tell you what to do. You go down to your room, go to bed, take plenty of aspirin and water, keep very warm, and in just a day or so, your cold will be gone. "And I know," she said coyly, "because I am Billy Burke from Hollywood." The old gentleman turned to leave and Miss Burke continued, "By the way, what might be your name?" Slowly, but, pointedly, the man answered, "I am Dr. Charles Mayo of Rochester, Minnesota."

May I hasten to add that your invitation is one which is accepted also for the profession I represent. My colleagues might not particularly appreciate it, but so it is.

Let it be frankly admitted, and in a mutual way, that there was a time when doctors and ministers bore a relationship which can best be described only as a relationship of "courteous contempt." It was courteous, but it was also contempt, and it was mutual. Ministers took too seriously one of the Scriptural descriptions which reads, "And Asa did not seek the Lord, but sought help from his physicians. And Asa slept with his fathers, dying in his forty-first year as king." (II Chronicles 16: 12b, 13.) Doctors on the other hand, thought of ministers as a group of unintelligent, superstitious egotists, who paraded their prejudices without any sympathy for scientific studies.

Churches are engaged in a battle designed to rid people of evil spirit. Different denominations employ different methods, so the story goes. The Roman Catholics are said to chant them out, the Baptists wash them out, the Methodists shout them out, the Episcopalians kneel them out and the Presbyterians freeze them out.

We may be thankful for a new day. Not all of us have lost hope of the soundness and satisfaction of monogamous marriage and of chastity, despite the Kinsey report. We believe that 5940 women can hardly fairly represent 50,000,000 others, and morals are not made by a majority vote, but by conscience. Not all of you have submitted to the statement that man is only a physical animal, because, you see, and this is wisdom, if man were only a physical animal, you would be veterinarians and we preachers would be jobless. In our day and time, more than ever, we as ministers realize that a person's body will be either a mansion or a mud-hole, either a heaven for his spirit or a hovel, and either a temple or a trash can. So also, more than ever, we gratefully express our appreciation to you for practicing with the realization that man is unique because he has a soul, a creative mind and a will that all too often defies analyses or predictions. During the last ten years the number of doctors who appreciate prayer has greatly increased.

We appreciate you too for your skill as general practitioners. This has not always been true. I can recall a story told about a wealthy farmer who lived in a small town community in northeast Georgia. His family doctor had faithfully attended the man and his family over the years. The doctor used an old home for temporary hospital facilities. On one of the farmer's visits the doctor found a stomach ulcer condition which seemed to demand surgery, and told the farmer of the condition. The farmer was angry and proceeded to call the doctor every type of "so and so." Whereupon, the farmer pronounced, "I'm going to Johns Hopkins and if I have to have an operation, it'll be done in a good hospital by a good doctor. (The farmer did not know that the doctor had done special work in surgery at Johns Hopkins.) Imagine the surprise on the morning of the operation, when the farmer saw his own general practitioner come in, ready to operate. Said the doctor, "Sir, I told you we could do it at home. You thought I couldn't do it and if I did, you wouldn't pay. Now, I'll do it and you will pay! The hospital brought me by plane for the surgery." The anesthetic was administered, the doctor operated, the patient recovered. A general practitioner had developed skill in surgery. Many of them do in fields related to their practice. We appreciate that fact!

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*Presented at annual assembly of the Mississippi Chapter of the American Academy of General Practitioners, Jackson, Miss.

†Pastor of the Central Presbyterian Church, Jackson, Miss.

May I ask you to continue your patience with us preachers. We do interfere sometimes, and impede the recovery rate of patients you are helping. However, we are making some progress and our seminaries are giving better training in "the art of visiting the sick." There is hope.

I. FIRST, LET'S TAKE A LOOK AT OUR SOCIETY:

Dr. George A. Buttrick has given an amazingly accurate analysis of the dilemma of modern society. He says, "We are overcoming ignorance, pestilence, prejudice and even death—but, baffling issue, the end result of our civilization is the fear of a corpse beside a burning tank, or an incineration, where a few minutes earlier there was a city. When science could make streamlined comfort we have the atomic bomb. Our psychology promised "real personality" and peace, yet nervous cases multiply too fast for hospitals. *The dilemma —we are ignorant, we are aware of our ignorance; we need new truth.*

We need new truth!
We need redemption from wickedness!
We need deliverance from death!

It is my conviction, that in this matter, you and I have a responsibility. This responsibility is moral, religious and civic. It is pointedly described in a recent summary by J. Edgar Hoover entitled "Crimes in America":

°One out of twelve persons in our country attends church.

°Seven out of eight children quit church and Sunday school attendance before they reach fifteen years of age.

°Fifteen million "sex" magazines are printed monthly and read by one-third of the American people.

°There are more bar maids in this country than college girls.

°One million — ONE MILLION — Americans have venereal disease.

°100,000 girls disappear every year into white slavery.

°One million illegitimate babies are born annually, perhaps it would be better to say one million babies are born to illegitimate parents.

°There are almost a million illegal abortions performed annually.

°Our nation harbors three times as many criminals as college students.

°A major crime is committed every twenty-two seconds.

°An aggravated assault or rape every hour.

°A murder every forty minutes.

°There are sixty suicides in our nation daily.

°Three out of ten who start as light drinkers end up as drunkards.

We in America spent $9,150,000,000 for liquor and $5,837,000,000 for our entire educational system, public and private. We spent $9,150,000,000 for intoxicating beverages and $1,620,000,000 for all religious and welfare work. We spend three times as much for our prison system than we do for schools. *Gentlemen*: *We are a part of the problem or a part of the solution.* This is our society at the point at which it needs truth, redemption and deliverance! This is the part of society in which our obligation has not been met. This is our dilemma.

II. POSITIVE AVENUES UPON WHICH WE MAY DELIVER FULFILLED OBLIGATIONS

1. *Let's take a look at the alcoholic.* He is a major concern to society: industry, the home, the church, and to himself.

When the American Academy of General Practice met in 1951 in Atlantic City, a symposium on alcoholism set down this truth: "The doctor and the minister have the first opportunity to direct an alcoholic into redemptive channels." There is a need in Mississippi for cooperation of doctors with the organization known as Alcoholics Anonymous. In my humble opinion, after some experience, I believe this organization presents the brightest hope in our time for redeeming the alcoholic. It is a public responsibility to help the alcoholic. All too frequently, however, this is what happens: the newest doctor in town gets the call to minister to an alcoholic, and he will serve him only until his clients are sufficiently large in number to keep him relatively busy. And then, quite frankly, the treatment is all too often in the nature of continued doses of barbiturates. Gentlemen, repeated sedation is not the answer. I have known alcoholics who actually became addicts to an unspeakably horrible substance known as "paraldehyde." Obviously, the non-redeemed alcoholic is a nuisance. There are ministers, too, who are aware of that.

May I ask you, beg of you—put your alcoholic patients in touch with Alcoholics Anonymous. There is a charter near you, wherever you practice. The doctor and minister have an opportunity. Our opportunity is our obligation. An obligation in the realm of truth, redemption and deliverance.

2. *Take a solid look at the sex situation in our time*, with the hope that we can keep our eyes open to the fact that we are not refined veterinarians as doctors, and that we have an office with portfolio as ministers.

That man is an animal is true. That he is only an animal is false. Our bodies and our souls catch each other's diseases. You know that a promise many times is as curative as a pill. Often, a person will not be rid of a fever until the fear is removed. With all of the information and misinformation in our society, there is a real problem in existence, relative to sex relations that produce harmony and happiness. Our state laws, for example, do not even require a blood test before marriage, let alone a complete physical examination! I say, hesitantly, but say it nevertheless, doctors frequently will not and do not counsel with young people about marital sex relations, except to remark casually, "You're old enough to know!" The use of contraceptives has become a crutch among people who should have children! On this crutch they limp along with one or two children, howling that there are people who have too many children and that these same people don't know how to rear them. Incidentally, this remark comes often from what is known as the upper crust of society, whom someone has characterized as "the crumbs of society held together by their own dough."

Sex is not only physical! It is spiritual! Again, I beseech you to use your influence in something which to me is an obligation!

Our state laws need changing. Marriage must be protected. Blood tests should be required before a marriage license is issued.

When you have opportunity, give counsel on the spiritual aspects of the sex relation in marriage.

A wise use of contraceptives is essential. Help society to keep it from being a crutch. A civilization cannot long exist if its members who are college graduates do not even reproduce themselves.

I know—we have Freud with us. He was needed. We have also a Jung and an Adler.

Above and beyond that, we have the testimony of history that monogamy in marriage is basic, and that parental love issuing in children who are loved, is an essential element in a healthy society.

Your help in showing the truth, offering the possibility of redemption and deliverance is essential. It is your obligation.

3. *A third positive avenue* upon which we may deliver fulfilled obligations stems from the spiritual nature of man as we know him.

The same famous doctor who said, "The only difference between me and a veterinarian is that I am treating a physical organ that has a soul," said also, "Fears, worries and resentments result in functional disturbances and organic failures," and "The laws of the body and the soul are a part of the same code.

Dr. John Sladen of the Ford Hospital in Detroit, was asked some years ago to head a committee of doctors who would set themselves to discover the spiritual principles by which a person might maintain physical and spiritual health. They engaged in a long period of intense research and finally adopted nine laws. They are known by their more popular name "The Beatitudes of the Sermon on the Mount," spoken first by Jesus Christ.

We of the church blush that the Christian Science movement was occasioned by a gap in the church's practice and procedure. We dedicate ourselves to the filling of the gap. For the sake of truth, redemption and deliverance, you have an obligation to treat man as a spiritual being and thus also "fill the gap."

4. I believe you have an obligation to stop an unthinking public and a possible national administration from demanding and receiving a system of socialized medicine. Let us not engage in idle day-dreaming. People must have your services. Someone will make it their business to see

to it that people of every income bracket have medical care. Whenever a professional group allows itself, for whatever reason, to place security above service, monetary returns above physical and spiritual rehabilitation, it has lost its birthright. Socialized medicine must be condemned for what it is and may I humbly suggest, that the oath you took before becoming general practitioners, must be fulfilled above and beyond the call of duty, to the point of sacrifice. It is not how long you have practiced your skills but how well.

5. Finally, I have a conviction, that you are under a binding obligation to enthusiastically support all institutions in the community which teach truth, which offer redemption, and which point to a way of deliverance. The churches, the schools, civic clubs, political organizations, your home, all these and others. As a minister I want to say without any fear of successful contradiction, that the best hope of our time lies in a personal, momentous, meeting with Jesus Christ, and in a disciplined service in His name. By now it has become quite apparent, that as goes the church of Jesus Christ, so goes a nation. We are stewards in God's world. We owe nothing. We shall take nothing with us when we leave it, except what we have invested in mankind.

We congratulate you, we honor you, we need you, we the members of society. You have prolonged the days of our mortal lives, you have given us comfort. With you lies the hope of defeating the dread diseases which now overwhelm us. You are one of society's greatest hopes.

If what has been said sounded at all critical, remember, mankind marches ahead only as it fulfills obligations that are the purchase price of all that the spark of God in his breast longs for. You and I must play our part in the chain that draws mankind to its eternal destiny.

We are a part of the problem that creates obligation or we are a part of the solution.

The logic of life calls you to a solution.

That it must be done within the realm of the Christian Gospel and Christian ethics, I would again affirm.

Will you not join me in saying to our world—
Thou stained man, yet dreaming in thy fears:
Thou lonely man, child of a lonely race:
Thou captive in this hold of streets and years:
  Lift up thy face!
The iron skies now yield in rifts of light,
The shining stairs are set on earth from heaven,
Angels in silver grace redeem the night:
  The gift is given!
The world beyond our world now stirs and shakes,
A trumpet sounds; the watchmen greet the morn;
And harpers smite their harps, and splendor wakes,
  For Christ is born!
O shepherds faithful in an evil time,
O Magi of the holy gift unpriced,
O Mary white with love, help us to climb
  The stair of Christ!

States with the highest number of doctors per capita have the largest number of young men and women who want to enter medical school.

The District of Columbia has the largest number of applicants for admission to medical schools this fall — 19 per 100,000 population, while the doctor ratio is 31 per 10,000 population. New York ranged second with 18 applicants per 100,000 population and a doctor ratio of 20 per 10,000.

The study shows that chances of gaining admission to medical schools are greater for students living in states having state-supported schools. Ten states have no medical schools at all and four have only private schools. All private and some state medical schools accept some out-of-state applicants, but generally students from states not supporting medical education are not accepted in as great a proportion.

Resuscitation of the Severely Wounded Man*

J. H. HOLLOMAN, M.D.
Columbus, Miss.

PROMPT, POSITIVE intelligent action on the part of the surgeon or physician very frequently means the difference in life or death when dealing with the severely wounded and shocked patient. During the year that I have recently completed in Korea, approximately 6500 battle casualties were operated on in the hospital when I was acting as C.O. and chief surgeon. Our responsibility was resuscitation, surgical treatment and post-operative care of these wounded. The observations and impressions that are presented were gained largely from these experiences. Only very severely wounded and shocked patients are considered in this discussion.

Consider very briefly the events and physiological alterations that occur when a man has sustained a severe wound. Usually associated with such a wound there has been excessive blood loss with reduction of circulating blood volume. In an effort to compensate for this state there is an over-stimulation of the sympathetic nervous system. The blood vessels of the extremities are in a state of spasm. In spite of this and other measures of compensation by the body there is a reduction of pressure in the aorta. As a result of this an adequate supply of oxygen is not delivered to such organs as the heart, brain, and kidneys. Hypoxia of the heart may lead to sudden cardiac arrest. Prolonged anoxia or hypoxia of the kidneys will result in lower nephron nephrosis or the crush syndrome.

In addition to the blood loss, these patients are usually in severe pain and a state of extreme anxiety. These factors will also contribute to the state of vasomotor collapse.

On receiving such a patient, our task then is to restore his blood volume and pressure, oxygenate his vital organs and relieve his pain and anxiety.

Before any treatment is started it is most essential to examine your patient. Place him in the horizontal position and treat him very gently. Cut his clothes away. Don't try to remove them in the conventional manner. This added manipulation may be all that is necessary to kill him. In a very brief examination you can determine if he has 1) obstruction of his air way, 2) a sucking wound of the chest, 3) a crushed chest, or pneumothorax, 4) an unsplintered fracture, or 5) continued bleeding.

While you are making this examination the nurse or other assistant can be preparing to give I.V. fluids and morphine.

If there is obstruction of the air way due to a maxillo-facial or neck wound, you are obliged to do an immediate tracheotomy, sometimes without anaesthesia.

If there is a sucking wound of the chest, don't try to suture it, plug it up with a wad of gauze and tape. It can be repaired when the patient's general condition has improved.

If there is a crushing wound of the chest, leave the patient in the horizontal position. In such an injury only his diaphragm is breathing for him. His intercostals are not working. To elevate his feet in the conventional shock position is to embarrass his diaphragm and increase his hypoxia. If his chest is not crushed his feet and trunk should be elevated and his head lowered in the conventional shock position.

If there is an unsplintered fracture of a long bone, it deserves high priority and should be splinted immediately. Frequently splinting such a fracture will result in immediate improvement of the patient.

Any continued bleeding should be controlled not by a tourniquet and not by applying pressure to the so-called pressure points over major vessels, but by a pressure dressing at the site of the bleeding, plus elevation of the bleeding part if this is practical.

Any continued bleeding should be controlled not by a tourniquet and not by applying pressure to the so-called pressure points over major vessels, but by a pressure dressing at the site of the bleeding, plus elevation of the bleeding part if this is practical.

I would like to emphasize that at this state of the examination, an x-ray definitely is not part of your examination. To move a severely shocked patient for the purpose of taking x-rays is a very grave mistake. From this added manipulation he is very apt to die on the x-ray table.

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* Presented at the quarterly meeting of the Northeast Mississippi Medical Society, Columbus, Miss., March 10, 1953.

While the patient is being examined and the complicating factors corrected if they are present, oxygen and I.V. fluids are started and a ¼ gr. morphine is given intravenously. I say I.V. because if given subcutaneously in the shocked patient, it will not be absorbed due to poor circulation.

There is no substitute for whole blood in treating the severely wounded and shocked patient. As soon as whole blood is available, it is substituted for the I.V. saline or dextran the patient is receiving. It is given rapidly under pressure with two or more veins receiving blood.

Another very important phase of preoperative therapy is begun at this time, and that is a word of encouragement and reassurance to the patient. He is extremely anxious and frightened. To allay his fears will improve his state.

The response to these measures is usually quite remarkable and very soon the patient is in fit condition to undergo the most major surgical procedures. There are some cases, however, that do not respond to this régime. If there is no improvement after three or four pints of blood given by veins, an intra-arterial transfusion is done. For this procedure I prefer to use the radial artery. This artery can be quickly exposed by a cut down and a needle inserted into it. The blood is pumped into the artery or the bottle is elevated to a level that gravity will force it in.

The rationale of the intra-arterial transfusion is to give the heart a force to work against, thus elevating the pressure in the aorta arch. This directs a greater flow of blood into the coronary and carotid arteries. The response to this measure is usually very dramatic.

There is a word of caution that should be inserted here. A prolonged intra-arterial transfusion in the radial artery may result in gangrene of the hand. This results from a retrograde flow of blood up the brachial artery and no oxygenated blood reaching the hand. This is not a contraindication for doing an intra-arterial transfusion. The danger of gangrene is small and we are gambling possible loss of a hand against a loss of life.

If your patient still fails to respond to all of these measures, we must assume there is continued severe internal bleeding. The surgeon then has no choice except to proceed with an operation in spite of shock in an effort to control the bleeding. If the patient withstands the assault of the anaesthesia and the initial surgery, he is frequently removed from the operating table in much better condition than when he was placed there.

§

HOW TO LIVE LONG

FOR REASONS not understood by the young, the middle-aged and elderly are much concerned with longevity. It appears to be the almost unanimous desire of the human race to extend its life span on earth.

In this regard, it would be perhaps "scientific" to analyze longevity records in the United States to see under what favorable conditions the three score and ten may be extended. From data obtained from governmental and insurance company sources we can learn a little about the age-old problem of aging.

First, you should not be poor. The prospects for a long life are best for individuals in the higher income brackets, in general, and poorest for unskilled laborers; however, in recent years the gap is gradually closing.

Secondly, you should live in the prairie states. The best longevity is found in this region, whereas the mountain or southern states have a relatively shorter expectancy. The difference is not tremendous and is in part affected by occupations characteristic of the region. However, you should also select an area with good public health facilities.

Thirdly, you should be a farmer, for that occupation seems to carry a slight advantage in longevity over the more industrialized worker.

Fourthly, you should be married, since that blissful state rewards one with a lower death rate than the single, widowed, or divorced. Just how marriage confers direct or indirect benefits leading to a longer life is unknown.

Fifthly, you should be healthy; at least you should treat promptly any and all deviations from good health, and very likely (although it is not absolutely proved) you should follow the established principles of personal hygiene. Obviously, you should drive carefully and not slip in the bathtub.

Sixthly, and most importantly, you should select as your ancestors a healthy stock of long-livers, because the trait seems to run in families.

Or perhaps, as someone has said, "The way to live to a ripe old age is to develop a chronic disease in youth."

BOOK SECTION

INSTALLMENT 5

Atlas of Rush Pin Technics

LESLIE V. RUSH, M. D.
Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

This is the fifth of a series of monthly installments to be published in *THE MISSISSIPPI DOCTOR* during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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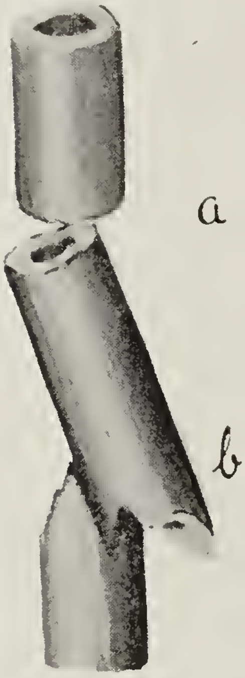
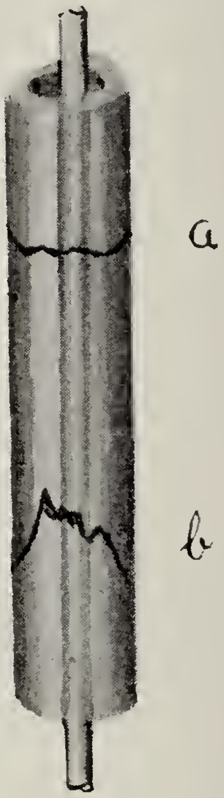
Double Fractures



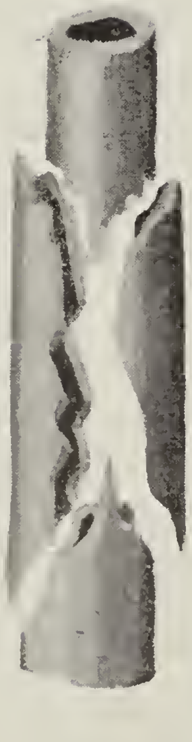
These are dealt with just as single simple fractures, each fracture being transfixed in turn. Security of fixation becomes a little more complex because "a chain is no stronger than its weakest link." Each fracture influences the over-all stability of fixation of the bone. Fracture (a) being smooth might have a tendency to twist; fracture (b) is not likely to rotate because the fracture surfaces are irregular and can be locked in position.



11

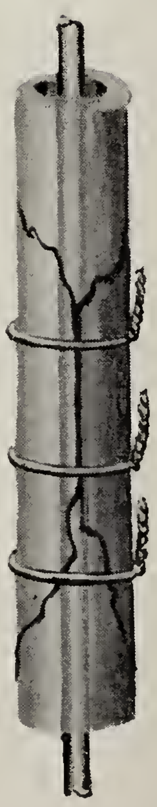
MULTIPLE FRAGMENTS

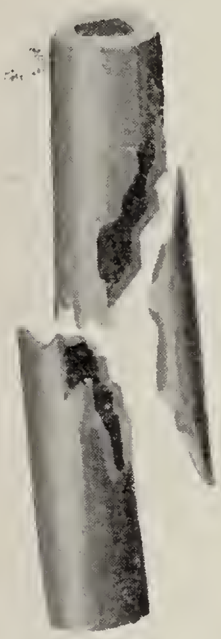
Double Butterfly Fragments



It is obvious that such a fracture cannot be stably transfixed by a pin or a nail alone. The longitudinal muscle pull will cause the butterfly fragments to separate. The main fragments will telescope to produce marked shortening.

Supplemental circular wires provide stability and in this type fracture will prevent twisting of the bone.

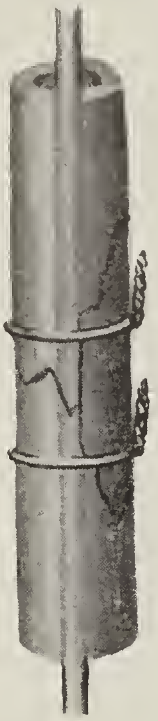


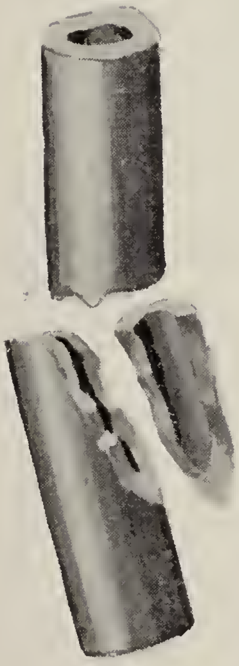


Single Butterfly Fragments

A fracture of this type may or may not require supplemental wiring. If reduction provides firm contact between the ends of the proximal and distal fragments, telescoping or shortening cannot occur. If this fracture line is notched or irregular, this alone might insure against twist. Longitudinal muscle pull might hold the butterfly fragment in position.

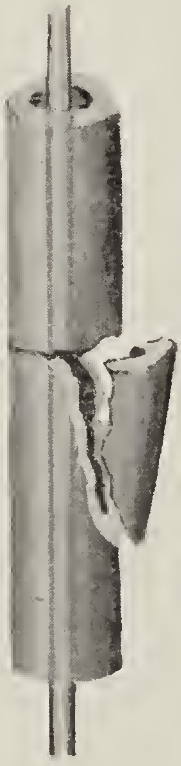
Added circular wires will provide better fixation, better bone contact, and prevent twist.

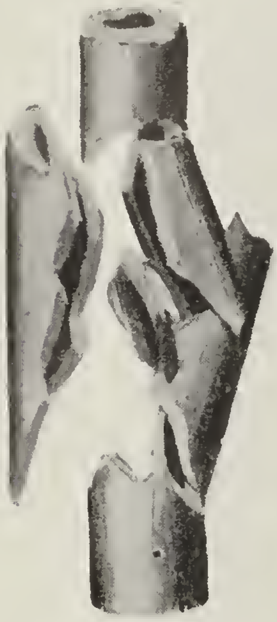




Half Butterfly Fragments

The factors involved here are similar to those mentioned above. In the fracture shown not a great deal can be accomplished by circumferential wiring. Wiring will not increase the stability of fixation and will not influence twist because the main fracture is smooth and transverse. Wiring will hold the detached fragment in snugger contact with the distal fragment.

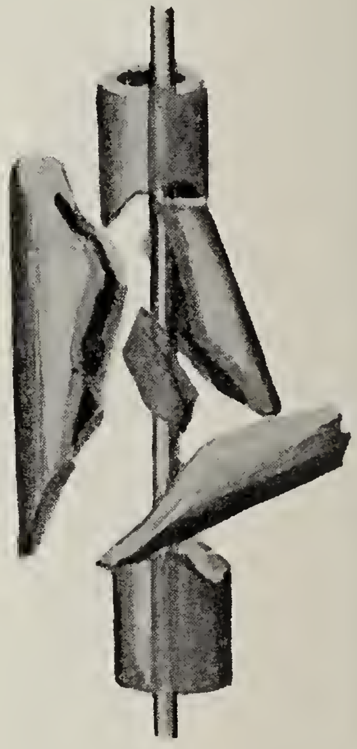




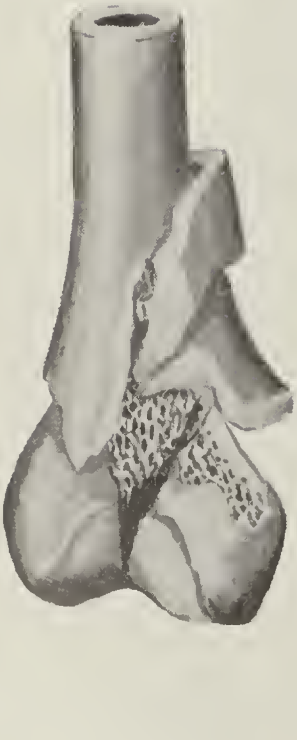
Bag of Bones Fracture

This fracture can tax the surgeon's ingenuity to the utmost. The proximal and distal fragments can be satisfactorily realigned on the pin. Circular wires may prove a marvelous adjunct or prove ineffective.

The tendency toward telescoping can cause the wires to slip and loosen, to break or untwist. If stability is doubtful, external splinting or traction should be used.



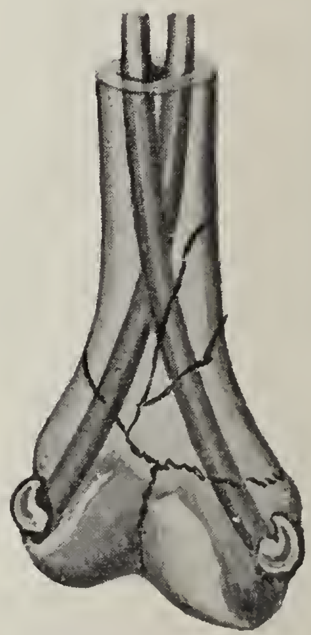
Comminution Near Joints

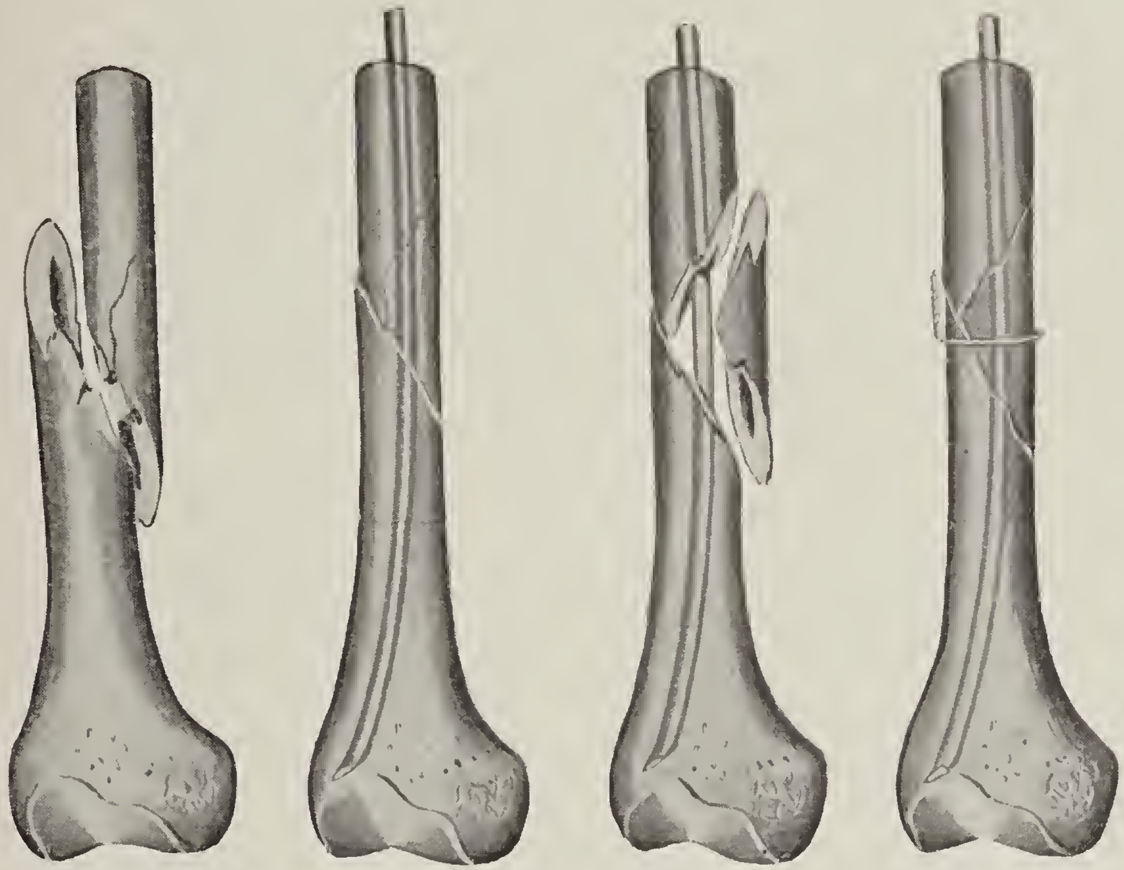


Pinning of the elbow region requires *open reduction.*

Closed reduction and pinning have often been found more effective in other regions. This is particularly true in comminuted fractures of the neck of the humerus, the distal radius, the distal end of the femur, and both extremities of the tibia.

When traction is instituted in the proper direction, the fascial envelope tends to compress these fragments into a satisfactory relationship. When an incision is made, this helpful factor is lost, and reduction becomes more difficult. And when double pins can be used, as in the supracondylar femur fracture, there is little tendency to telescoping or rotation.





A properly reduced SPIRAL FRACTURE should be stably held by pinning alone. Circular wires are occasionally needed, because most spiral fractures are in reality comminuted. The x-ray film can be extremely misleading in this fracture.

About Circumferential Wiring

Comminuted fractures warrant serious consideration because they are becoming more and more to be reckoned with. This is to be expected now that we are dealing with older age groups and with more violent accidents.

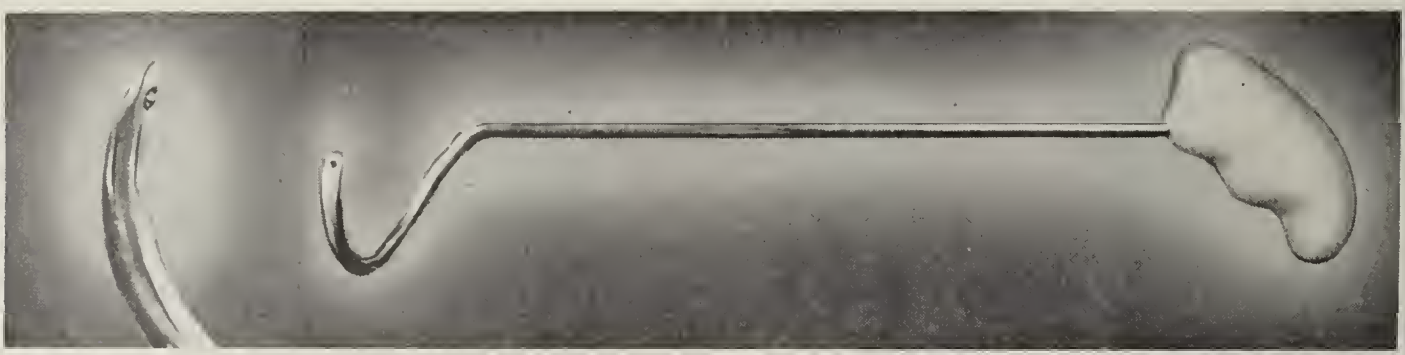
In our experience the complemental use of circular wires with medullary pins has on the whole been most satisfactory, both as to stability of fixation and bone healing.

It must be pointed out that circular wires should be meticulously avoided in children. They constrict growing bone.

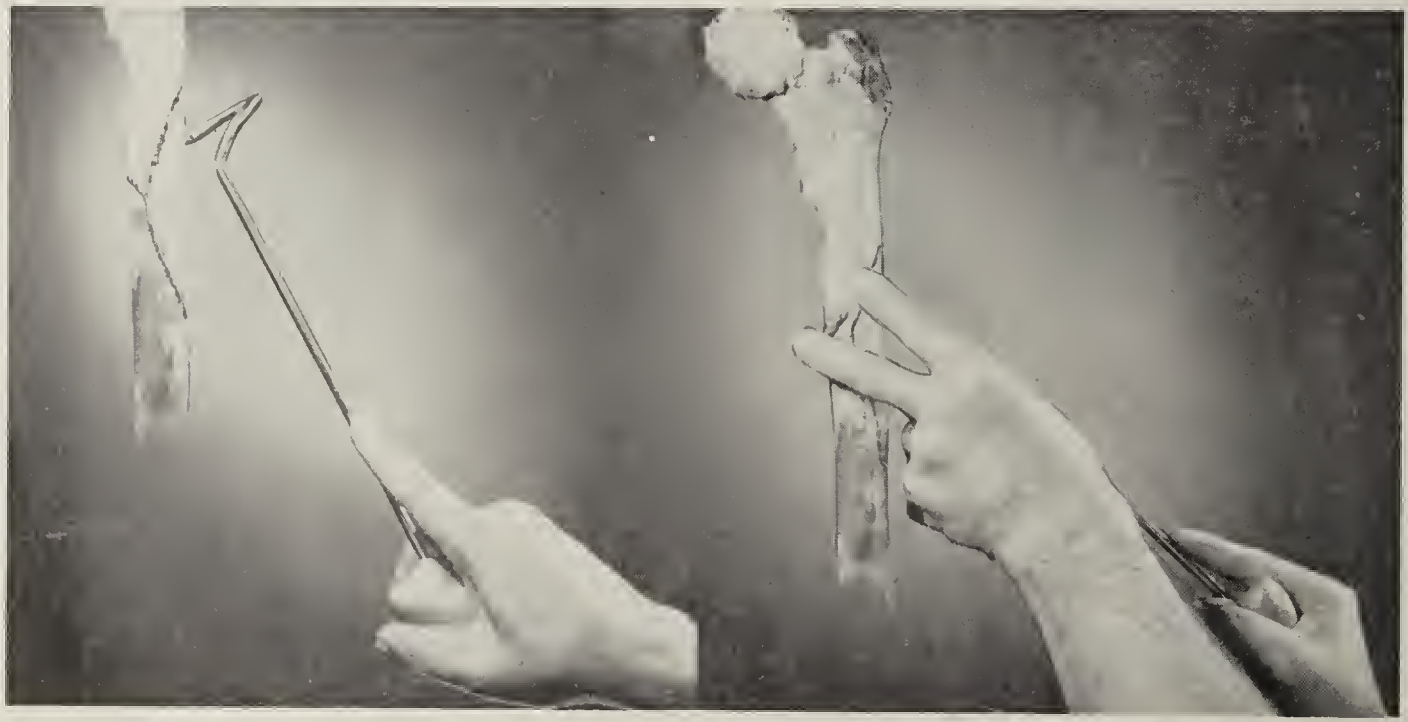
Circular wires have not always enjoyed a good reputation. Wiring alone cannot be depended upon for good fixation. They may slip and become loose; they may break or untwist.

To be used effectively they must be applied without cutting the soft tissue attachments from the bone fragments. To do so lessens the healing potential. The soft tissue attachments keep the wire from crawling or slipping into the fracture line where it would become loose and ineffective or even interfere with healing.

The wire must be large enough and strong enough to remain snug after twisting. And above all, the fracture must be amendable to wiring. Multiple short fragments cannot be held in this manner.



The dissecting wire carrier designed to permit the placing of circular wires without separating soft tissue attachments from the fragment.



Applying Circular Wires

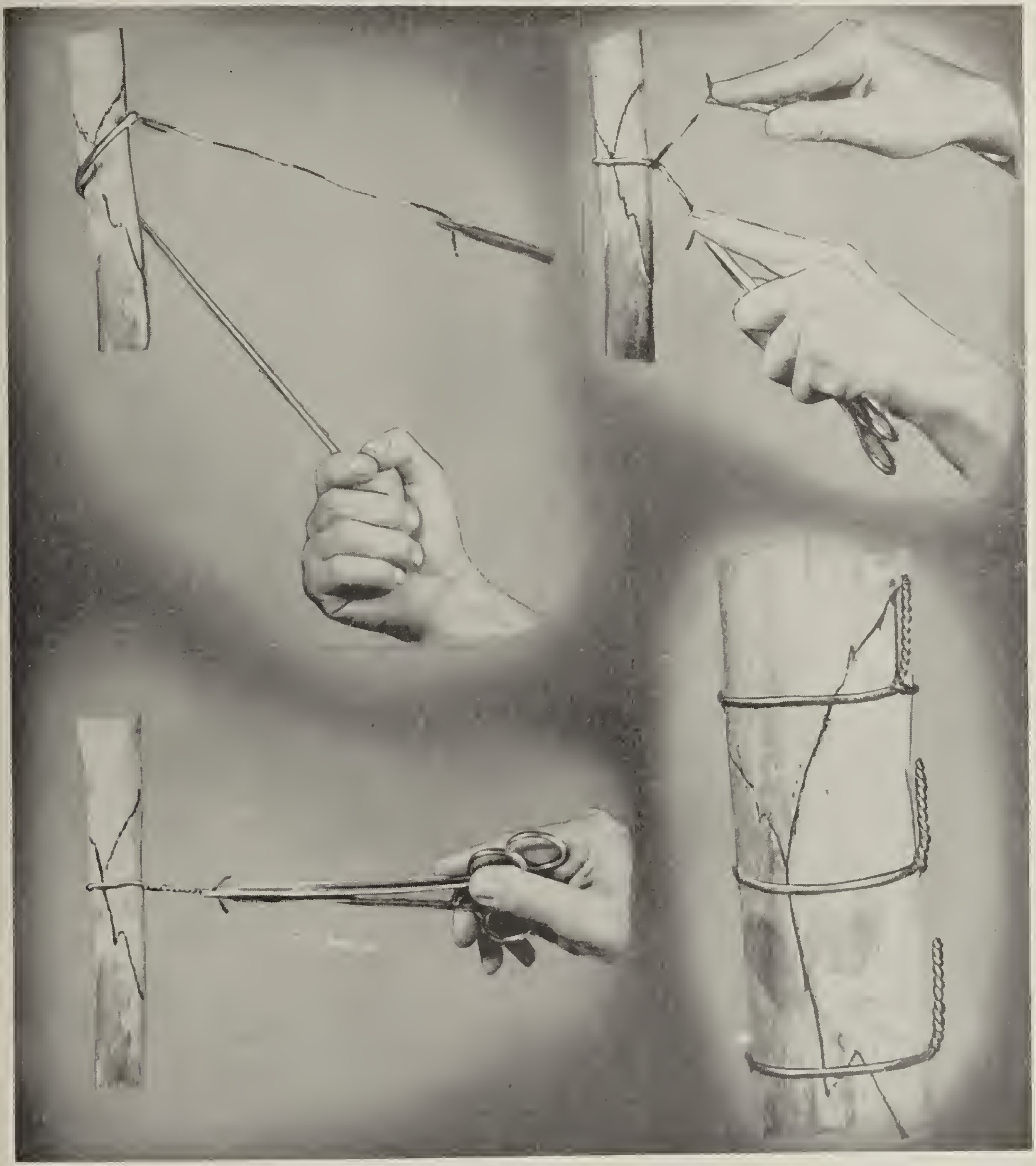
Comminuted fractures can present quite a problem at times with any type operation. Yet many times reduction and fixation can be accomplished as a semi-open procedure.

It is desirable to limit dissection and surgical trauma as much as possible. As the surgeon becomes more experienced he develops an acute sense of "feel" in his fingers so that he becomes less and less prone to expose the bone to direct vision.

To facilitate this conservative type operation the wire carrier above was developed after several years' experimentation. The wire carrier has certain unique features.

The point has the traditional eye through which the wire can be threaded. The point has been shaped as a dissecting tool with a moderately sharp cutting edge. The inside of the tip is flattened, the outside tapered.

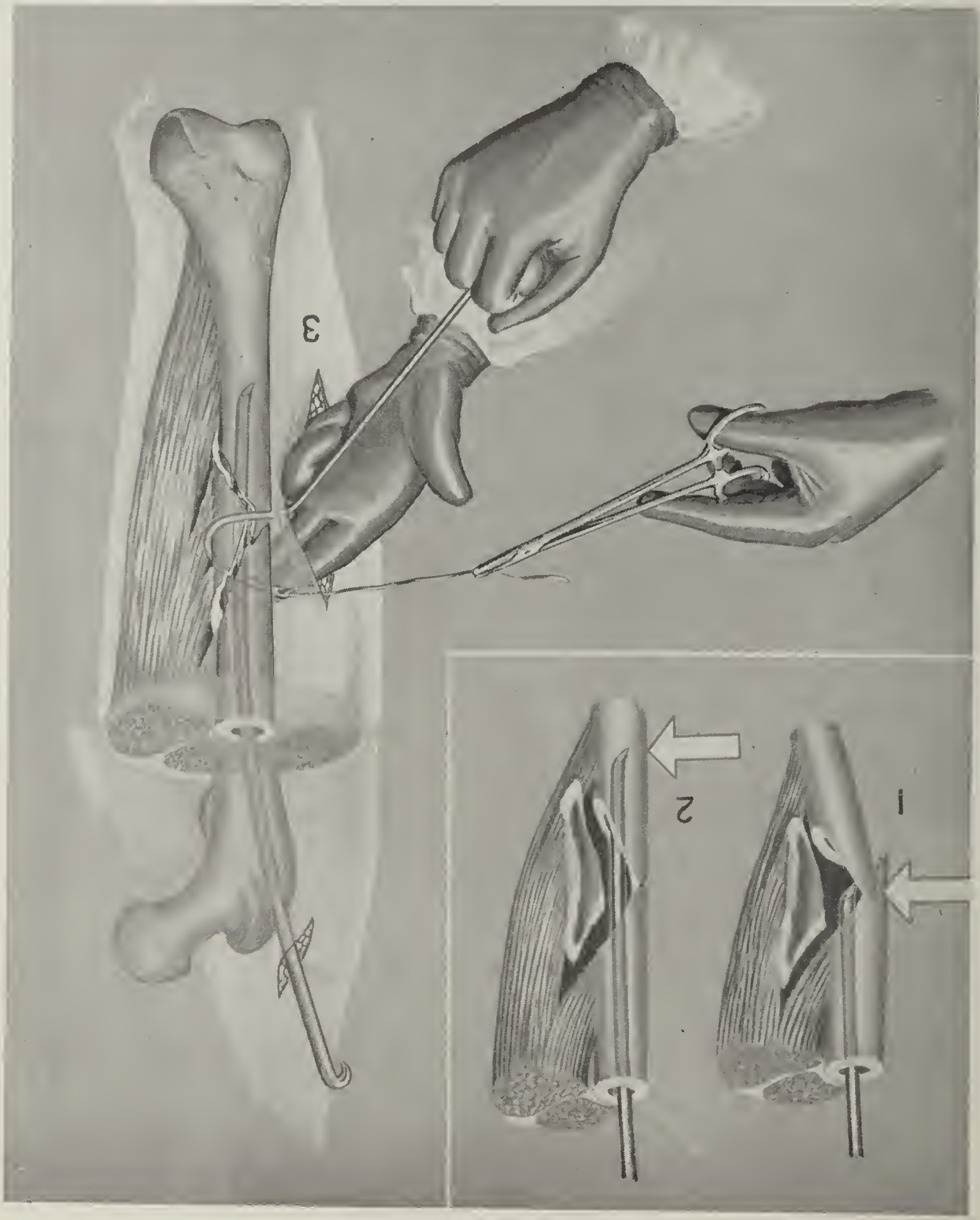
This design makes it possible to hug the wall of the bone as it passes peripherally. The point can be pushed through the soft tissue attachments of the bone. Two palpating fingers in the wound allow the experienced surgeon to pass the instrument avisually, and by keeping the point in contact with the bone, important nerves and blood vessels are not endangered.



The peculiar curve of the instrument is to permit it to be passed around two-thirds of the circumference of the bone so the eye can be visualized for threading. With a true semicircle it is difficult to bring the point into view for threading.

The pistol grip handle permits effective manipulation of the instrument.

The wire is tightened by twisting, using two needle holders. Do not use artery forceps if it is intended to use them again for soft tissue.

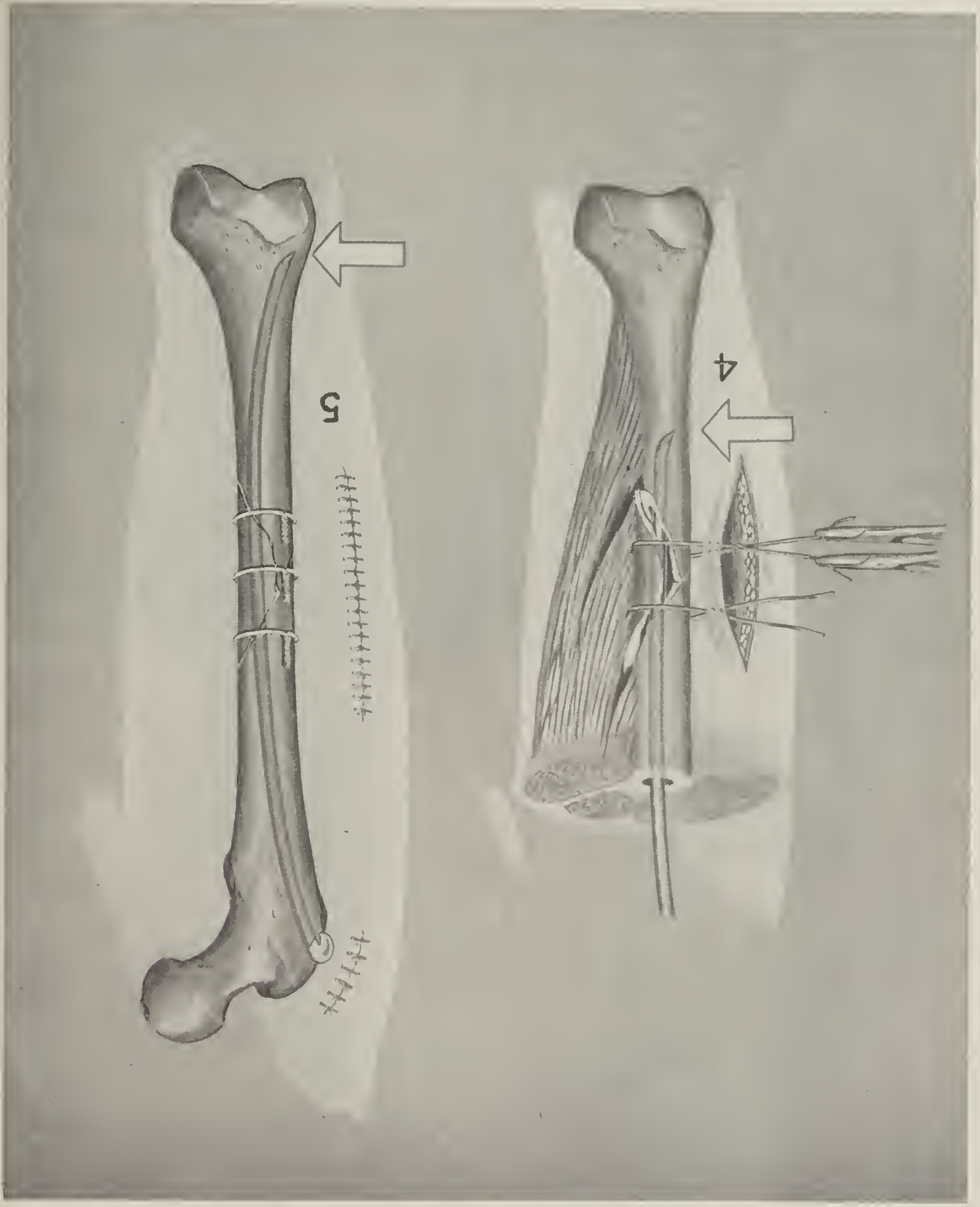


Technic Comminuted Fractures

(1) Drive the pin to fracture site.

(2) Align proximal and distal fragments, engage pin in distal fragment, but do not drive pin home.

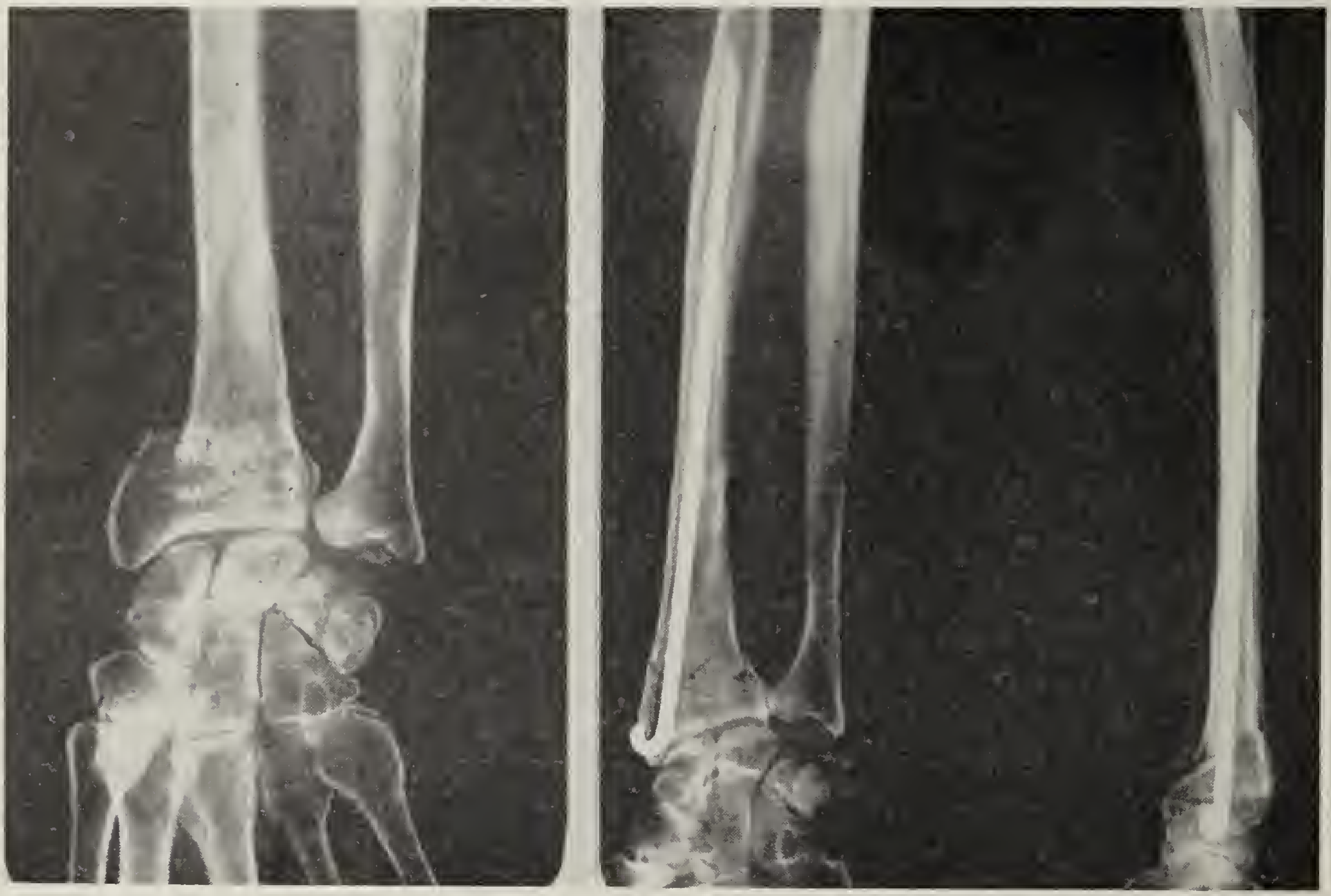
(3) Leave soft tissue attached to fragments. Pass wire-carrier close to bone, through the muscle attachment using the guiding fingers. Thread point of wire carrier



to place wire loop around the bone.

(4) Use wire loops instead of bone clamps to maneuver fragment or fragments into position. Twist wire snugly but not tight.

(5) Drive pin home, tighten wires to complete operation.



The effectiveness of medullary pinning in fractures near joints is best exemplified in Colles fracture.

12

SHORT FRAGMENTS

Fractures Near Joints

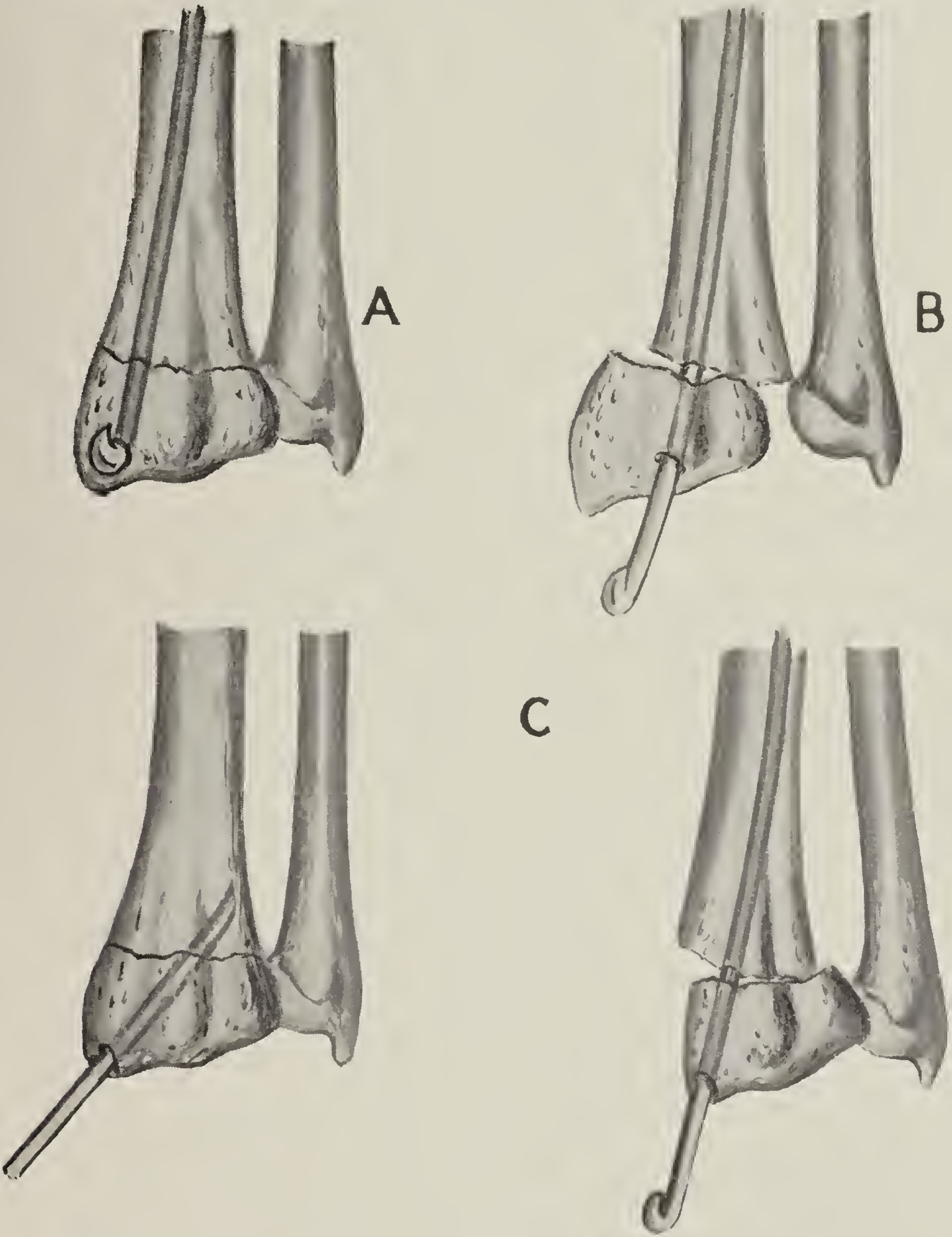
That much can be accomplished in pinning fractures near joints is best exemplified by Colles fracture. Here one must deal with a short fragment and reestablish a double joint relationship.

It has been shown that fixation within the shaft is easily accomplished because the radius is a mildly tortuous bone. When the medullary pin is driven into the shaft of the radius, it makes firm bone contact at three points, giving stable fixation within this fragment.

For stability of the short distal fragment there must be accomplished a successful opposition of forces. The fragment has been forced into radial deviation because of intrinsic forces within the wrist. It is shoved into position by the dynamic force of the pin (vase of flowers principle). As the pin enters the medullary cavity, the point is deflected so that the pin rocks on a fulcrum like a seesaw in such fashion that the head of the pin is forced medially, compressing the short fragment in the same direction.

An additional opposing force is provided by the styloid end of the ulna. If reduction is perfect, the distal end of the ulna is snugly pressed into its notch in the radius, reestablishing stability so that there is little tendency to anterior luxation of the ulna even though the triangular ligament has been torn.

Near other joints secure fixation can be accomplished without deformity, but only if there is provided this successful opposition of forces. If the pin force is exerted in the same direction as the intrinsic force (deforming force), deformity will result.



(*A*) *CORRECT. Pin has been properly applied in an axis approximating that of the medullary cavity.*

(*B*) *WRONG. Point of insertion will produce deformity.*

(*C*) *WRONG. Angle of insertion will produce ulna deviation of fragment.*

Traversing Short Fragment

To transfix any short fragment, the point chosen for insertion must be accurate. The pin must traverse the short fragment in a line closely approaching the long axis of the medullary cavity. Otherwise the deflection of the pin in the medullary cavity will force the fragment into malposition or angulation.

In Colles fracture the wrong angle of insertion in the short fragment can produce anterior angulation, posterior angulation, or ulna deviation of the fragment.

In other regions similar deformity can be produced. If the pin is not opposed by intrinsic forces, the pin must be opposed by the force of a second pin.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

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EDITORIALS

THE NURSING QUESTION

The training program for nurses in Mississippi continues to be a live subject, and seems to be taking a definite direction. All have become genuinely enough concerned to give it honest and interested study. The Commission on Hospital Care, the State Medical and State Hospital associations, and the Nurses Association are all keenly related to the problem, as are the people at large who are to be served.

The registered nurse occupies a place of undoubted importance in our medical service economy. But recent developments impinge upon the trustees of the institutions of higher learning added responsibility in this problem since it has to do with education above the high school level. The trend of thinking now seems to be settling around a system that will utilize our junior colleges, our community hospitals over the state, and our central teaching hospital in Jackson—to provide at least three years of training above the high school level. There is an admitted demand for nurses with academic training beyond the high school level and who have pursued special study. But right now the registered or diploma nurse who has had three years of training in addition to high school can not be replaced in our present nursing services.

Another facet of the problem is posed by our Negro population. The Baptist Hospital training school for nurses in Jackson is doing a good work by training colored nurses. Since our state has nearly fifty per cent Negro population it is an obvious requirement that we have well-trained colored nurses. Our hospital for tubercular patients is well and favorably known around the world. We understand that there are many rooms for the colored unoccupied in this institution because we lack trained colored nurses for them. The solution of this problem is our challenge.

THE AMEF . . . LET EACH GIVE

The Committee on Medical Education is continuing its constructive and progressive work with the announcement on October 7 that a campaign in behalf of the American Medical Education Foundation will be conducted during November and December in Mississippi. Facts and figures show that this campaign, designed to support our free-enterprise system of medical education, is both a timely and appropriate project for our association.

The latest figures released by the American Medical Education Foundation and the American Medical Association, listing grants made to the seventy-nine accredited medical schools in July 1953, show clearly the disparity between contributions from Mississippi and grants to our own medical school. This past July, the AMEF gave with no strings to the University School of Medicine a class "A" grant of $7,500, a class "B" grant of $2,240, and earmarked contributions of $125, a total of $9,865.

In contrast, the total contributions from Mississippi physicians for the entire year 1953 are

$220 from five contributors. Of the five physicians making these gifts, all were earmarked for medical schools of their individual choice.

To substantiate the contention of the Committee on Medical Education that all gifts to medical schools ought to be made through the AMEF, one need only reexamine the case of the University of Mississippi. The funds earmarked for this school were received as intended by the givers plus a neat profit for the school of exactly $9,740!

This is by no means intended to infer that a larger grant would have been made if individual contributions had been larger in amounts and numbers. Rather, it is intended to point up the wide disparity between what Mississippi physicians are giving and what the school is receiving. Fortunately, the AMEF was able to give each four-year school $15,000 and each two-year school $7,500 from corporate donations together with earmarked funds this year. In addition to these grants, a class "B" grant which is based solely on total enrollment was made in the amount of $20 per student, a total of $2,240 for Ole Miss with her 112 medical students.

During 1952, only nine Mississippi physicians gave to medical education through the American Medical Education Foundation. On the other hand, 267 Mississippi physicians gave directly to their schools and in doing so, they unwittingly denied their schools additional matching funds which the AMEF is able to furnish.

It is of the highest importance to understand that a physician can give to the medical school of his choice and still make his contribution through the AMEF. During November, every member of the Mississippi State Medical Association will be asked to help with a gift to or through the AMEF. Dr. Temple Ainsworth, chairman of the association's Committee on Medical Education, summed it up neatly when he said that ". . . the size of the gift is not nearly so important as wide participation. Let each give as he is able and willing on a free-will, voluntary basis, but by all means, let each give."

President Ewing has appointed a chairman for the AMEF campaign for each of the sixteen component societies. Every member will be called upon. This is our profession, our medical schools, and our AMEF.

Let each give.

DR. HILL HONORED

The fifty-year celebration for Dr. Jim Hill of Corinth on October 4 was a generous expression of love and appreciation to one who has served long and nobly. The town and the country were well represented and so were the Alcorn County Medical Society and the Northeast Mississippi Medical Society.

Dr. Hill was born in Union County, but grew up in Alcorn. He has been well honored by organized medicine, having served as president of the state organization as well as his district society. He has served outstandingly as doctor citizen—a great factor in preserving the profession's noblesse. He has rightly appraised the importance of building a citizenship adequate to meet all problems. He has ministered to the physical needs of his people, shown them the way in mental development, and activated spiritual responsibility in his community. He has entered into the pleasures and joys and sympathies of his people. He has laughed with them, wept with them, and counseled with them.

Dr. Hill has quite well demonstrated that if a man keeps mentally and physically fit that he is worth more to human society each day that he lives, even though he lives to be a hundred. He is now fourscore, but active and interested and serving well. His kind heart is more than a crown.

DR. CLARK

Members of the medical profession pass on as well as others. Our state recently sustained a great loss in the death of Dr. Richard H. Clark of Hattiesburg. Able and well-balanced in medicine, he was a man of kind heart and fine professional manner. He was not only well prepared in medicine and surgery, he was also a man of breadth and vision in affairs of public life. His influence was felt for good in the fine city of Hattiesburg. Sincerely devoted to his family, his church, and to his profession, he leaves an invaluable heritage. His wife, Helen Polk Clark, was the immediate past-president of the Woman's Auxiliary, and as presiding officer at the Doctor's Day luncheon at the state meeting, her finesse sparkles yet in the memory of those who attended. With a family background of high intent and purpose, she exemplified the ideal of a doctor's wife. We offer our sympathy in the untimely loss of one worthily esteemed alike by confrere and townsman.

Every doctor should be a subscriber to *Today's Health.* He should read it and introduce it to his patients. Every American family would benefit from this excellent magazine. Its value can not be estimated. The American Medical Association is using a great wisdom in publishing such a journal for the information and the education of the lay public. The strength of the nation is in the health of its people, and its protection through intelligent dissemination of knowledge is a mighty defense.

NEWS AND COMMENT

MSMA CONFERENCE OF OFFICERS HELD

More than sixty key physicians of the Mississippi State Medical Association attended the first annual Conference of Officers held in Jackson on October 7. The conferees met at the Hotel Heidelberg for a four-hour session in the first non-scientific, interim meeting for the consideration of organizational matters. Dr. M. Q. Ewing, president of the MSMA, presided.

Eight fields of activity were covered in as many open forum reports by association officers and committee chairmen. Prior to the session, the Council met during the morning and at luncheon. Attending the conference were eight MSMA officers, eight Council members, seven committee chairmen, twenty-four committee members, six component society presidents, and nine component society secretaries.

Keynoting the conference, Dr. Ewing said that ". . . we are bridging a gap which has been too wide for too long. A year passes quickly, but a year is almost too long between meetings of our House of Delegates."

Emphasizing that the conference did not constitute a meeting of the House of Delegates, the president pointed out that Council action could result from the deliberations. He told the conferees that they had ". . . the opportunity of establishing a valuable institution for the association. . ." in this type of interim meeting.

Dr. George E. Twente, Jackson, reported on over-all activity and the growing membership in the state. He congratulated the committees having active projects and scheduled meetings.

The Committee on Medical Education, represented by Dr. Temple Ainsworth, Jackson, chairman, reported on the progress of the new four-year medical school and of the committee's planning for a concerted American Medical Education Foundation drive during November and December.

Dr. Ainsworth reported the appointment of a sixteen-member AMEF sub-committee which will spearhead the drive locally throughout the component societies of the association. Plans formulated by the committee include the mailing of full information to each member in the state as well as personal contact by the local chairmen and their committees.

Reporting on the third year of operation of the AMEF, Dr. Ainsworth said that more than one million dollars have been given to medical schools this year through this AMA-sponsored and underwritten project. Physicians making contributions, he continued, may earmark their gifts for their own schools and be assured of the entire amount reaching the school of their choice. He pointed out that contributions are fully tax-deductible; that every penny given goes to medical education, since all administrative expense of the AMEF is paid by the American Medical Association; that the contribution can be sent in the giver's name to the school of his own choice, the advantage here being to make the contribution through the AMEF in order to secure matching funds made available by corporate donors; that uncollected pledges will not be presented for collection against an estate, in event a physician dies before fulfilling his pledge; and that there are no strings on the funds given which are to be used as trustees and deans see fit.

The association's planning committee, reporting through its chairman, Dr. James Grant Thompson, Jackson, discussed recommendations of previous years made by his group, expenses at the annual meeting for out-of-state guest essayists, postgraduate training, the concept of the interim conference, permanent quarters for the association, and a reference committee system for the MSMA House of Delegates.

Dr. Thompson pointed out that twice the House of Delegates had urged positive action on a building for the association and that the Planning Committee is recommending implementation of these mandates by having facts and figures for presentation at the eighty-sixth annual meeting in May, 1954.

Allied medical agencies were the subject of a report by Dr. Lawrence W. Long, Jackson, chairman of the special committee which will bring a symposium program on public and private agencies sponsoring medical service activities before the association's component societies beginning November 3.

Dr. S. K. Johnson, Pelahatchie, reported on program progress for the Committee on Rural Health, including the survey of rural physicians and the Scott County survey on prepaid medical coverage and facilities.

Dr. Ewing in his report discussed the State Medical Education Board program, the supply of physicians, medical ethics, public treatment institutions, and Blue Cross-Blue Shield coverage.

The Council reported through its secretary, Dr. H. C. Ricks, on actions taken during the morning session. The component society secretaries present met in a special roundtable discussion on membership procedures with Dr. Twente and Mr. Rowland B. Kennedy, executive secretary of the association.

The conferees were entertained during a midmeeting recess with refreshments served on the East Terrace of the Heidelberg Roof.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The seventeenth annual meeting of The New Orleans Graduate Medical Assembly will be held March 8-11, headquarters at the Municipal Auditorium.

Eighteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. The program will include fifty-four informative discussions on many topics of current medical interest, in addition to clinicopathologic conferences, symposia, three dimensional surgical motion pictures, round-table luncheons and technical exhibits.

The Assembly has planned another interesting postclinical tour to follow the 1954 meeting in New Orleans. On Sunday, March 14, the group will leave Los Angeles via Pan American World Airways and accommodations have been secured at the Royal Hawaiian Hotel in Honolulu, Island of Oahu.

After an interesting sightseeing schedule, the group will leave on Wednesday, March 17, for the Island of Kauai, where reservations have been made at the Kauai Inn. Visits will also be made to Hilo and the Kona Coast. The party will return to Honolulu for several days prior to sailing on the S. S. Lurline on Thursday, April 1. Arrangements have been made for visits to hospitals and for various medical programs.

Details of the New Orleans meeting and the postclinical tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

O AND O SEMINAR

The eighth annual University of Florida Midwinter Seminar in Ophthalmology and Otolaryngology will be held at the Sans Souci Hotel in Miami Beach the week of January 18, 1954. The lectures on ophthalmology will be presented on January 18, 19, and 20, and those on otolaryngology on January 21, 22, and 23. A mid-week feature will be the Midwinter Convention of the Florida Society of Ophthalmology and Otolaryngology on Wednesday afternoon, January 20, to which all registrants are invited. The registrants and their wives may also attend the informal banquet at 8 p.m. on Wednesday. The Seminar schedule permits ample time for recreation.

The seminar lecturers on ophthalmology this year are Dr. W. B. Anderson, Durham, N. C.; Dr. W. P. Beetham, Boston; Dr. W. C. Owens, Baltimore; Dr. A. B. Reese and Dr. M. C. Wheeler, both of New York City. Those lecturing on otolaryngology are Dr. E. N. Broyles, Baltimore; Dr. H. P. House, Los Angeles; Dr. W. J. McNally, Montreal, Canada; Dr. Dorothy Wolff and Dr. D. Woodman, New York City.

AMA CLINICAL SESSION

The seventh annual Clinical Session of the American Medical Association will be held in Kiel Auditorium, St. Louis, December 1-4. More than 3,500 physicians will be there.

A program has been designed to give the general practitioner an opportunity to see and hear the latest developments in medicine. More than 150 papers by outstanding physicians will cover such topics as internal medicine, surgery, pediatrics, obstetrics and gynecology, tuberculosis and other diseases of the chest, cardiovascular diseases, arthritis, dermatology, gastro-intestinal diseases and neuropsychiatry.

FOURTH BIENNIAL ACS MEETING

The fourth biennial meeting of the American Cancer Society, Mississippi Division, will be held November 18 and 19 at the Robert E. Lee Hotel in Jackson. The two-day session will be divided into lay and scientific discussions.

Group discussions will concentrate on education, campaign methods, terminal care, and service perspectives from the national viewpoint.

At the evening session of November 18, presided over by Dr. M. Q. Ewing, president of the Mississippi State Medical Association, Dr. Ralph R. Braund, director of the West Tennessee Cancer

Clinic, Memphis, will address the group on "Recent Advances in the Early Detection of Neoplastic Diseases."

From 2:30 until 5:00 p.m., November 19, the medical and scientific session, presided over by Dr. Willard H. Parsons, Vicksburg, papers will be presented as follows:

"Cancer of the Colon and Rectum—Presenting Symptoms", by Dr. Robert Moore, Professor of Surgery, University of Texas Medical School, Galveston, Texas;

"Modern Concept of Etiology and Treatment of Malignancies", by Dr. R. Lee Clark, director Anderson Hospital for Cancer Research, Houston, Texas;

"Diagnostic Importance of a Nipple Discharge in the Non-Lactating Breast", by Dr. Ralph R. Braund, director West Tennessee Cancer Clinic, Memphis, Tennessee.

ABSTRACT FROM PEDIATRIC LITERATURE

By HARVEY F. GARRISON, M.D.

Prophylaxis of German Measles with Immune Serum Globulin. Rovert F. Korns, Albany, N. Y. J. Infect. Dis. 90:183-89, March-April 1952.

Studies were carried out in an institution for mental defectives to see whether concentrated serum globulin would be of value in the prophylaxis of German measles. In the first trial, during three to 26 days after receiving 0.1 ml. per pound of body weight of one lot, only 9 cases occurred among 45 immunized persons (20.0 per cent), as compared to 35 cases among 60 comparable controls (58.4 per cent). This difference in attack rate is highly significant statistically. In later trials, one other lot of immune globulin failed to prevent the disease, while a third lot showed only slight protection.

COMMENT:

The studies carried out in the report are not conclusive. However, it is worth a trial, since the effects of German measles on the expectant mother certainly deserves consideration from the medical profession all over the country. So far as the individual child is concerned, German measles in most instances is a comparatively light disease and needs very little treatment.

Hospitals are one of the country's top markets for cotton—for linen, surgical gowns, masks, gauze, bandages and hundreds of other medical needs.

Deaths

DR. RICHARD H. CLARK

Funeral services were held September 25 in Hattiesburg for Dr. Richard H. Clark, who died on September 23 of a heart attack while in his office. Services were conducted from the Main Street Methodist Church, in which he was a member of the board of stewards.

Dr. Clark was born in 1900 in Jasper, Arkansas. He was graduated from the University of Arkansas, where he was a member of Pi Kappa Alpha fraternity, and from there entered Tulane University, where he was graduated with the M.D. degree in 1924. President of his class for two years, at the top of his class scholastically, Dr. Clark was a member of A.O.A., Stars and Bars, Kappa Psi, O.N.E., Quo Vadis, Square and Compass, and Owl Club. He served a two-year internship at Charity Hospital, following with postgraduate work at Tulane and the Mayo Clinic.

Dr. Clark moved to Hattiesburg in 1926, and engaged in the practice of surgery up until the time of a coronary attack six years ago. Since that time he had taken courses in cardiography and x-ray interpretation, and confined his practice to internal medicine.

He was a fellow in the American College of Surgeons, a member of the American Medical Association, the Southern Medical Association, Mississippi State Medical Association, of which he was vice-president at the time of his death, the South Mississippi Medical Society, and the Hattiesburg Clinical Society, the last two of which he has served as president. He was a Mason, a member of the Elks Club, a former member of Kiwanis, served on the Y.M.C.A. board and worked with Boys Camps.

Dr. Clark is survived by his wife, the former Miss Helen Polk, and four children, Richard H. Jr., a senior in medicine at Tulane, Ann Wellington, a senior at Randolph-Macon, Helen Polk, a senior in Hattiesburg High School, and Carroll Clark.

DR. EDD L. ROBERTSON

Dr. Edd L. Robertson, a former resident of Belzoni, passed away on August 31, at the hospital in Coral Gables, Fla., where he had been confined since October, 1951.

Dr. Robertson was born in Hazlehurst, Miss., 78 years ago. He moved to Belzoni in 1909 and made this his home until 1918. At the outbreak of World War I he formed the 154th Field Hospital Corps here. He was given the rank of major. After returning from overseas at the close of the war, he moved to Washington where he served with the Central Board of Appeals, U. S. Veterans Bureau, until 1943, when he retired and moved to Fort Lauderdale, Fla.

Dr. Robertson was a charter member of the Belzoni Masonic Lodge and he continued his membership here until his death.

Funeral services were held at Fort Myers Chapel, at Fort Myers, Va., on September 4. His remains were laid to rest in the Arlington National Cemetery.

He is survived by his wife, Mrs. Stella D. Robertson, a daughter, Mrs. Malora R. Christman, and a granddaughter, Mrs. Malora Ingraham, all of Washington, D. C.

DR. GEO. IRBY REDDITT

Dr. George Irby Redditt, age 90, died in Morgan City at the home of his daughter, Mrs. W. H. Morgan, Sr., October 1. Services were held at the Carrollton Presbyterian Church, in which Dr. Redditt was an elder.

Dr. Redditt was born in Teoc on September 2, 1863. He graduated from Tulane Medical School on April 25, 1889, and on May 1 of the same year began his medical practice in McCarley which he carried on actively for more than 60 years. He retired only four years ago and even since that time occasionally went back to McCarley to prescribe for patients he had looked after through the years.

He was a Mason, a civic leader and a man of great sincerity and kindness who ministered to the great and small alike.

He was married to Miss Mary Alice Hill and reared three daughters, all of whom survive him. They are Mrs. B. H. Higdon of Sunflower and Mrs. W. H. Morgan, Sr., and Mrs. James Morgan, Sr., of Morgan City. He also leaves six grandchildren. Mrs. James C. Green of Tupelo; W. H. Morgan, Jr., James Morgan, Jr., and Mabel Alice Morgan also of Morgan City; and Mrs. Robert Morton of Terry, Mississippi.

DR. FRANK E. BARR

Services were conducted from the First Presbyterian Church October 4 for Dr. Frank Elis Barr, retired Starkville physician, who died at his home. He was 68.

Dr. Barr, who was born on the State College campus, where his father, the late Dr. William H. Barr, was college physician, retired from the active practice of medicine some years ago because of heart troubles, but had not been recently ill.

Dr. Barr was graduated from Mississippi A. & M. College at the age of 17, one of the youngest ever to receive the B. S. degree from the University of Virginia Medical School, where he belonged to the Ravens Society. He was a veteran the World War I and a member of the American Legion.

He leaves his wife, the former Miss Ethel Tarry of Boydton, Va.; a daughter, Mrs. Walton Biggs of Crystal Springs; a sister, Miss Mildred Barr, of Starkville, and three grandchildren.

RESOLUTIONS OF CONDOLENCE AND APPRECIATION

Whereas, It seemed wise in the providence of the Creator and Director of all that is best in human affairs to call the late Dr. J. H. Green of Tupelo, Mississippi, for his eternal reward in the year 1953, we as members of the Northeast Mississippi Medical Society in behalf of said medical organization, desire to express our condolence to his son and family and friends of Tupelo and the surrounding area.

We also desire to express our appreciation for the life and professional standing, ability, and willingness to serve long years in Tupelo and Lee County, and to express our thankfulness for his help that he gave to the Tupelo hospital staff and the medical profession at large, and his willingness to go ahead among his clientele, rendering whatever medical service he saw best to render and always doing this in a most unselfish manner.

We shall miss him from our ranks and especially from our professional meetings.

Be It Resolved, That a copy of these resolutions be sent to his son and family of Tupelo, Mississippi, and the *Mississippi Doctor.*

Respectfully submitted,
R. W. Carruth, M.D.
A. J. Stacy, Sr., M.D.
A. Jack Stacy, Jr., M.D.
Committee.

DR. G. H. WOOD

Services were conducted from the Batesville Methodist Church September 29 for Dr. George Hardin Wood, Panola County resident for 84 years, and one of Mississippi's oldest physicians.

Born in Opelika, Ala., Aug. 2, 1866, he moved with his parents to Panola County three years later. He attended public school here and at Sardis and taught school for two years before taking up the study of medicine at the University of Louisville, where he was graduated in 1891. At various times since then he has taken special study at New York Polyclinic, Chicago Polyclinic and the Mayo Clinic at Rochester, Minn.

In 1948 Batesville civic and service clubs joined in honoring the aging physician with a "Dr. Wood Day."

The kindly doctor was widely known for his humor and service. He had a record of never having refused to make a call, regardless of the weather or the patient's ability to pay. Many times, when he was too ill to make a call, a friend or a member of his family would drive for him, or the patient would be brought to him. He took great pride in the fact that many of his clients had never known another physician.

Dr. Wood was keenly interested in civic and political affairs of the community. During World War I he was a member of the draft board for five years. He served 15 years on the local school board and 20 years as Panola County health officer. For 36 years he was local surgeon for the Illinois Central Railroad and held a 50-year membership certificate in the Mississippi State Medical Association.

He had many hobbies, many of which turned out to be profitable, but he lost interest in them when he could no longer improve on them. At the age of 77, he mastered the Spanish language and a year later decided to replace his "hunt and peck" system of typing with the touch system.

In addition to his wife, he leaves a daughter, Mrs. Cheshire W. Hawkens of Batesville, and four sons, Dr. Charles Spencer Wood, of New Orleans, Dr. George Hardin Wood, Jr., of Big Springs, Texas, A. J. Wood of Rosedale, and Murphy B. Wood of Bakersfield, California.

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Collections and Credit of the Medical Profession*

It has been estimated that before the war, over one billion dollars were lost yearly on bad accounts . . . over three million dollars per day. This would seem to indicate that the American public as a whole is dishonest in its attitude toward obligations. However, this is far from the fact, for one billion dollars only represents one per cent of the unsecured accounts that are carried by American business and professional men. Our American way of life is based upon trust of our fellowman in the form of credits extended in business transactions and services rendered totaling one hundred billion dollars per year. Nevertheless, this one per cent or one billion dollars of delinquent accounts accumulated each year, constitutes a terrific drain on those who hold their obligations sacred, for eventually they must pay for this loss in higher costs for goods and services. That, too, is part of the American way that losses in business shall be passed on to the people who do pay their bills.

But of all business and professional men who acquire bad accounts, there is one profession which carries the largest burden of these unpaid bills. This is the medical profession . . . physicians and hospitals. It is estimated, that of the more than 100,000 physicians and surgeons in general practice in the U.S. that they average about $7000.00 on their books in delinquent accounts, and the hospitals of the nation carry an even greater burden, making a total in excess of one billion dollars in delinquent accounts carried by the medical profession alone. Much of this is never paid.

To a great extent the medical profession has unconsciously promoted the growth of the lack of responsibility in the American public in paying for medical services. An inquiring reporter, asking the question, "Which of your money obligations are you most prone to put off," would find that 90 per cent of the public would name medical obligations.

The dean of one of the South's large medical schools, a man who had been in general practice years before, said that he always sent three statements to a debtor, and if the debtor did not react, he marked his name off the books. He felt that he was doing the debtor a favor by allowing him to forget his obligation. We know from many years of dealing with debtors, that this is a fallacy in thinking, for when any person is allowed to side-step his obligations, his moral sense of responsibility is dulled to all other obligations, and he declines in moral worth as a good citizen. Of course there are many who come to a physician or hospital, who through sickness, death, inability to earn a living wage, etc.; cannot meet their medical obligations, but the majority of the millions of dollars carried by our hospitals and physicians as delinquent accounts, are owed by those who could pay their accounts, and would pay if they were made to feel a sense of responsibility in regard to their medical obligations.

All patients who come to hospitals and physicians, come under one of three categories: 1) . . . those who have provided insurance to meet their medical obligations; 2) . . . those financially able, and willing to meet their obligations; 3) . . . . those who are without funds at the time of their emergency. If they are ill, their ability to earn a living is impaired. They have a sense of honesty and are willing to pay for help in regaining their health, but, and this is a very big BUT, they have other bills that they have come to regard as important bills — car mortgage, house rent or mortgage payments, furniture bills, grocery bills — which mean forfeiture if they go unpaid. Instead of paying a small amount on their account, they put it off, for they have been led to feel that nothing is going to be done about it if the medical bill is put off. The second statement is easier to put off, and so it goes month after month, until the stage of resentment on receiving a statement is reached. Then the goodwill between physician and patient is impaired.

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*Submitted by H. H. Carlton, Field Director, Interstate Reclamation Bureau, 55 Beverly Road, N. E., Atlanta, Ga.

Years ago we of the Interstate Reclamation Bureau realized that 95 per cent of all debtors at the time of making their debts had an honest attitude in regard to their debts, and we developed a plan of approach to the debtor, whereby he is made to realize that when he is without funds, and in need of a friend, that the physician or hospital is his friend in need, and if he wants to consider himself honest, then he must make some effort to meet his obligations to these friends.

Of course the older an account grows, the more hardened the debtor becomes toward his obligation, hence collection percentages go down with the age of the accounts, for collection costs are higher. But from accounts less than a year old collection percentages are about 85 per cent, and the debtor is less resentful of being approached in regard to his obligation. Any debtor who, month after month, ignores the reminder sent him in the form of a statement, and who does not show the courtesy of stating why he has not paid or cannot pay, this debtor needs personal attention.

The newer the account, the easier it is to retain the friendship of the debtor, and this matter of retaining goodwill is very important. Interstate Reclamation Bureau developed an idea in collection, and put it to test through the alumni of one of the nation's largest medical schools. The plan lists all accounts under six years of age that the physician feels he will not be able to collect himself. As nearly as possible, without using unduly harsh methods, or antagonizing the debtor, the system gets the client on a current basis. Our client receives 50 per cent and the balance goes into a mutual benefit fund to be divided between the company and any beneficiary that the client may choose to name. The profits are then divided with the beneficiary.

Most all physicians donate in response to one appeal or another to their Alma Mater at some time, and often direct these funds into that channel. Others set up a scholarship in their name, or direct these funds to the charity ward of a hospital, their church, or whatever pet charity they may have. Hospitals always channel these funds into their own charity department.

Interstate furnishes many helps to its clients to assist them in collecting accounts when statements have failed. When these methods fail then Interstate requests that the account be submitted for collection, for if submitted then instead of years later, the returns are much greater to the client, costs are less, more money goes into the mutual benefit fund for the client's beneficiary, a sense of responsibility to obligations is stimulated in the debtor, goodwill has been reestablished, and the debtor feels better because he faces the world free of debt.

The most unhappy person in the world is the one who is overburdened with debt. Interstate lays out a plan whereby the debtor can meet his obligations, and next to his religion he is given something he can't live happily without. When all people feel that their obligations are sacred, the world becomes richer financially, richer in security and happiness.

Interstate Reclamation Bureau is like no other in the collection world. It is a national organization, insured to assure its clients of honesty and integrity, and offers a collection service undreamed of by those who have not made use of it.

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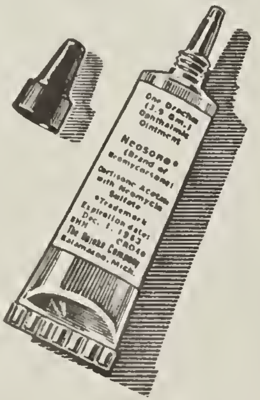
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The Diagnosis of Early Pulmonary Lesions*

EVERETT L. PIRKEY, M.D.
Louisville, Ky.

THE INCREASED use of x-ray as a diagnostic tool in chest examinations has presented us with a new problem, which is the recognition of early lung disease when seen on the roentgenogram. In years gone by the x-ray was used as confirmatory evidence of the presence of definitive disease found by clinical means. Roentgenograms of asymptomatic lung disease were rarely obtained. The advent of survey chest examinations and the more frequent and earlier use of the x-ray by physicians has resulted in the findings of numerous asymptomatic pulmonary conditions. It is only in the past few years that some of these have begun to be recognized before they assume the classical picture as described in the books.

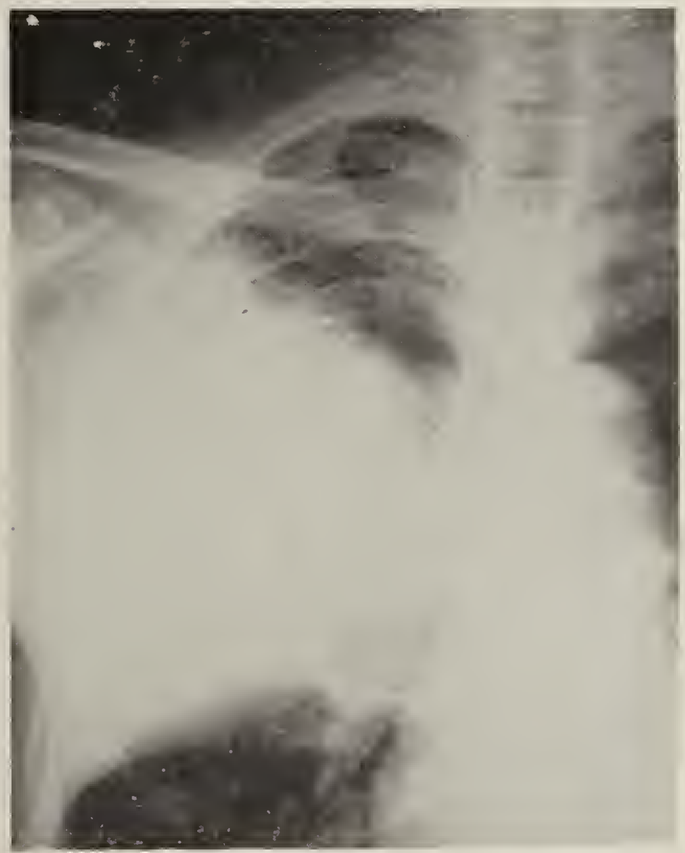

Figure 1 (Case 1). Consolidation of the right upper lobe due to lobar pneumonia.

Some of these early conditions will be presented in the following order:

1. Acute Infections of the Lung
   a. Lobar pneumonia
   b. Virus pneumonia
   c. Bronchopneumonia
2. Chronic Infections of the Lung
   a. Tuberculosis
3. Carcinoma of the Lung

Just to refresh your memory, the first case (Fig. 1) is a typical consolidation of the right upper lobe due to lobar pneumonia and little else need be said about it.

CASE 2, R. C., twenty-three-year-old white male who was seen in the outpatient department with a history of coughing, fever, and vomiting for the past twenty-four hours. He gradually developed pain in the posterior left lower chest. At the time of admission he had a temperature of 101.4°. Physical examination was not remarkable.

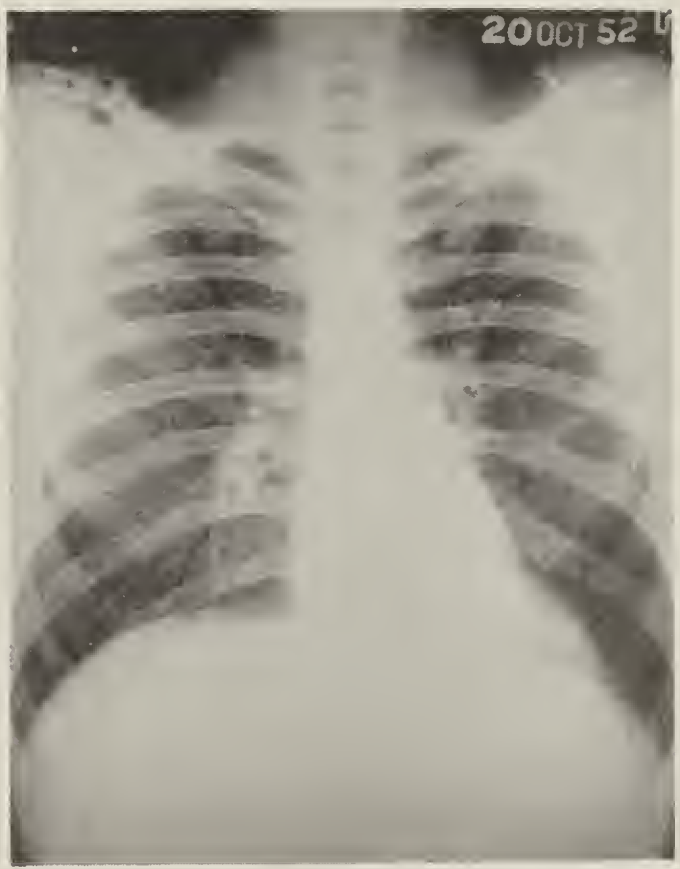

Figure 2 (Case 2). Segmental pneumonia of the left lower lobe behind the heart.

The x-ray (Fig. 2) shows consolidation in the left lower lobe behind the heart, typical of a segmental type pneumonia of the left lower lobe.

This picture is that of a probable pneumococci pneumonia seen on the roentgenogram at a rather

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*From the Department of Radiology, University of Louisville School of Medicine.

Aided in part by a grant to the medical school from the Kentucky State Medical Research Commission.

The illustrations were prepared by the Department of Visual Education, University of Louisville School of Medicine.

early stage. In our institution the use of bacteriology has fallen into a great decline so that we actually do not know the specific infecting organism in this case or in any of these cases we are showing today.

CASE 3. A. W., admitted to the emergency room with pain in the left posterior chest which was aggravated by breathing and coughing. His temperature was 98°. There was a pleural friction rub in the left posterior-inferior chest with decreased breath sounds and some dullness to percussion posteriorly on the left. The x-ray (Fig. 3) shows a diffuse hazy process scattered throughout the left lower lobe from the posterior end of the left 7th rib downward. The appearance is that of an infiltrating process rather than a consolidation and would suggest a virus or atypical type pneumonia.

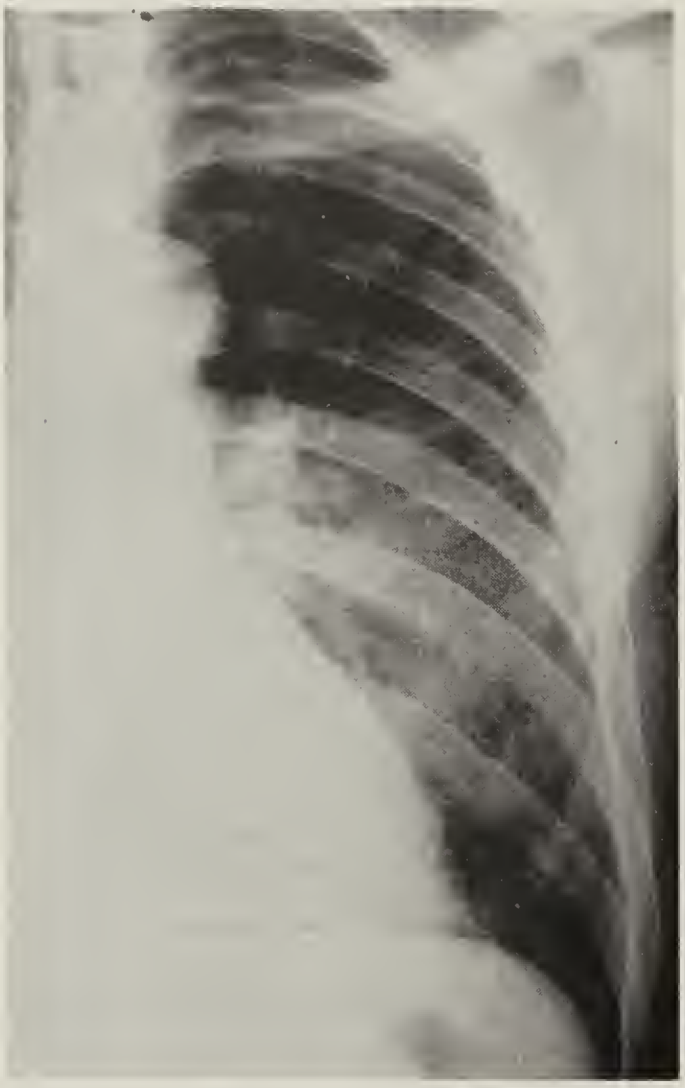

Figure 3 (Case 3). Virus type pneumonia of the left lower lobe.

Particular attention should be paid to the roentgen appearance of this case as contrasted with the previous two cases. The diffuse ground-glass appearance of the lung in the infected area would suggest that there is an interstitial infiltrate process going on in the lung rather than lobar consolidation in which the air in the alveolar spaces has been replaced by fluid. In those consolidated cases with fluid in the alveolar spaces one has a water density of the affected area which produces about the same whiteness on the film as the heart shadow; whereas in the infiltrating processes one has thickened alveolar walls, thickened interstitial tissue around the pulmonary markings, but air remaining in the alveolar spaces, and therefore, the diffuse ground-glass appearance with grayness of the affected area rather than the whiteness as seen in consolidated regions.

CASE 4, M. F., fifty-four-year-old colored female admitted with a chief complaint of weakness, fever and cough for one week. Had moderate dyspnea as well. On physical examination there were moist rales present in both bases, most marked on the right posteriorly. The x-ray (Fig. 4a) shows considerable lobular type infiltration throughout the lower half of the right lung field, apparently occupying the right lower lobe. The appearance is typical of a broncho or lobular type pneumonia. The follow-up film (Fig. 4b) made two weeks later shows complete resolution of the lesions in the right base.

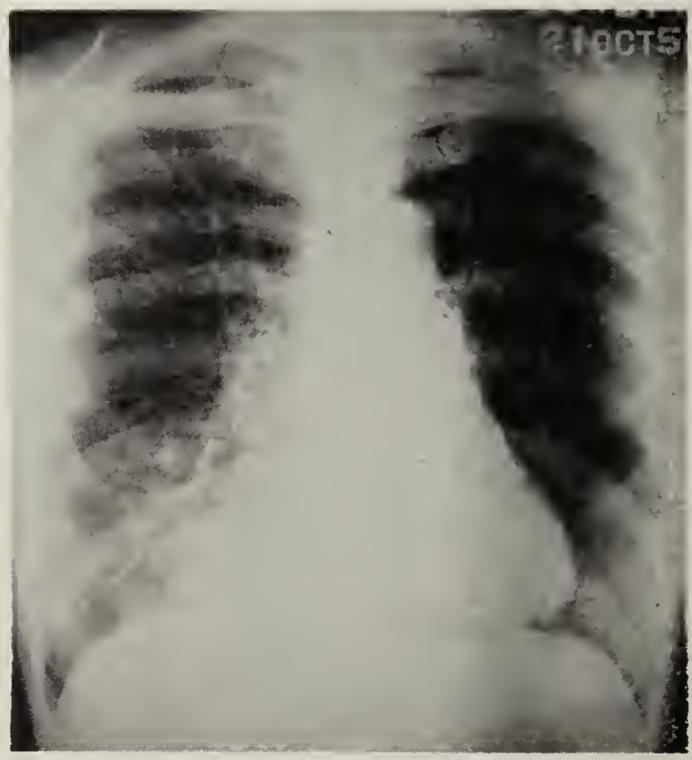

Figure 4a (Case 4). Bronchopneumonia, right lower lobe.

CASE 5, T. C., sixty-four-year-old white male with a diagnosis of pulmonary tuberculosis, reinfective type, moderately advanced, probably arrested in 1947 at the local tuberculosis clinic. He had no treatment. He was first seen by us

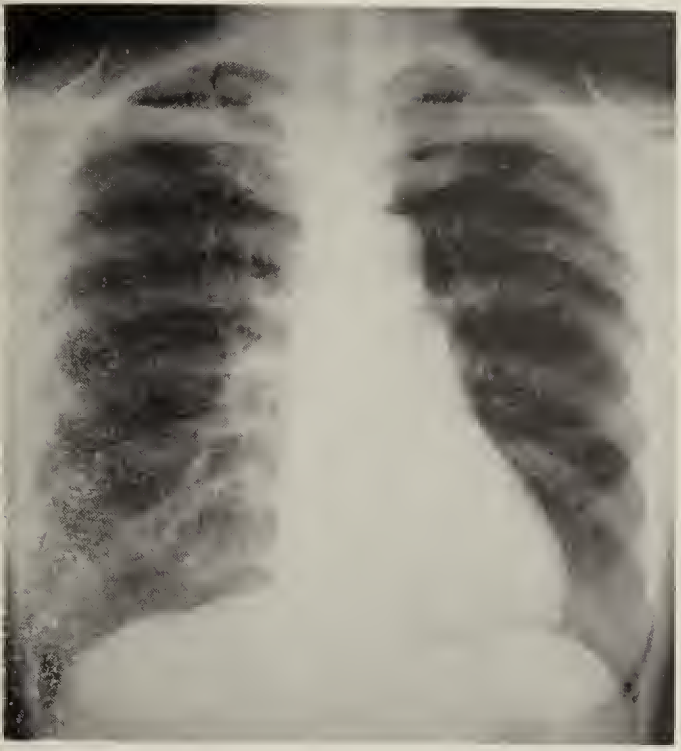

Figure 4b (Case 4). Same patient two weeks later.

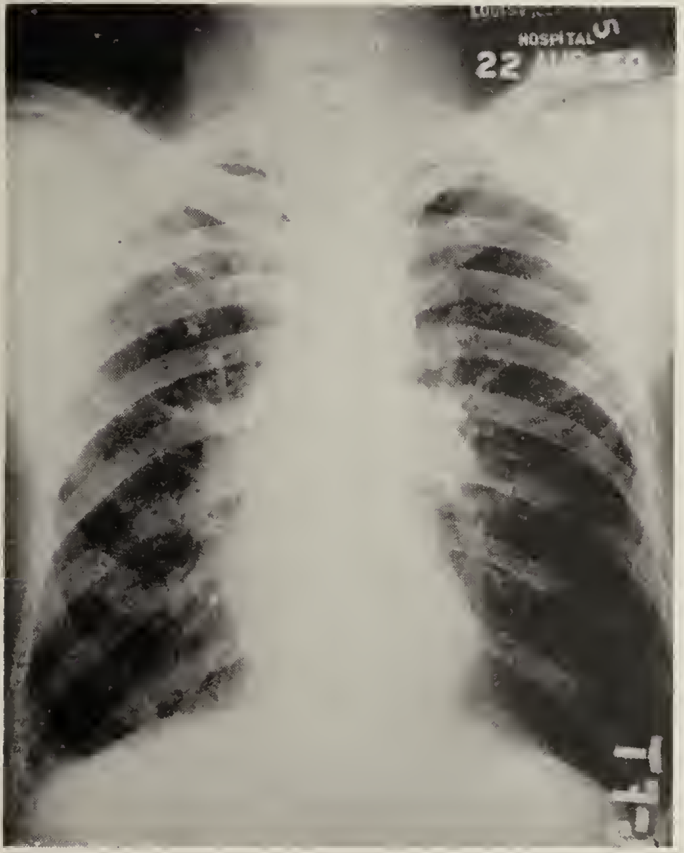

Figure 5a (Case 5). Pulmonary tuberculosis, reinfective type, moderately advanced, arrested. Note scarring in the right first I.C.S. Note also, questionable changes in the left second I.C.S.

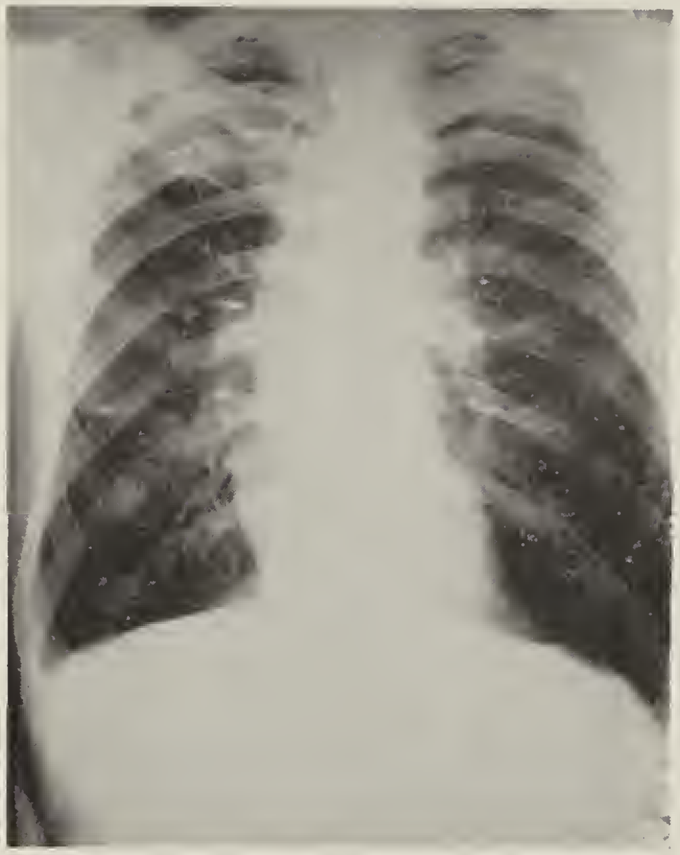

Figure 5b (Case 5). Same patient eight months later with activation of the lesion in the right upper lobe and thickening of the minor fissure on the right. Note development of the tuberculous process in the left second I.C.S. in the eight months' period.

three years later (Fig. 5a) with some linear scarring in the right first intercostal space with increased markings to the area and slight elevation of the right hilum and slight retraction of the upper mediastinal structures to the right. The remainder of the lung fields were clear. The patient was not seen until eight months later at which time the second film was made in March, 1951. At this time (Fig. 5b) the lesion in the right first intercostal space now appears much more soft than previously with thickening of the minor fissure on the right, which was not present previously. There is now noted some soft appearing infiltrate in the left second intercostal space which was not present previously and has the appearance of a new focus of infection. The patient was subsequently admitted to the local tuberculosis sanatorium.

These two films are very interesting in that they give us an idea of the time necessary for the development of a tuberculous infection. There are eight months between the films and it took at least that period of time for the new infection in the left second intercostal space to develop with its typical appearance of multiple small tubercle formation and beginning node enlargement in the left hilum.

Another important disease of the chest that should be considered in this day of chest surveys and more widespread use of the chest roentgenogram is that of early carcinoma of the lung. The following case is thought to be of interest.

CASE 6, H. C., sixty-one-year-old white male, had this first x-ray made on December 18, 1950, when he was admitted to the hospital with a history of chronic alcoholism and hypertrophic gastritis. He had no pulmonary symptoms. In this first film (Fig. 6a) one can see a small rounded area of increased density just over the scapular edge in the right second intercostal space with slight accentuation of the markings to the area. A subsequent film (Fig. 6b) made on November 12, 1951, eleven months later, shows a marked increase in the size of this lesion so that it now measures approximately 5 centimeters in diameter with a central area of decreased density and a small fluid level consistent with abscess formation in an area of infiltration. At this time the patient had had some pain in the right chest and a productive cough for three months. The patient had an exploratory thoracotomy which revealed a squamous cell carcinoma with central necrosis.

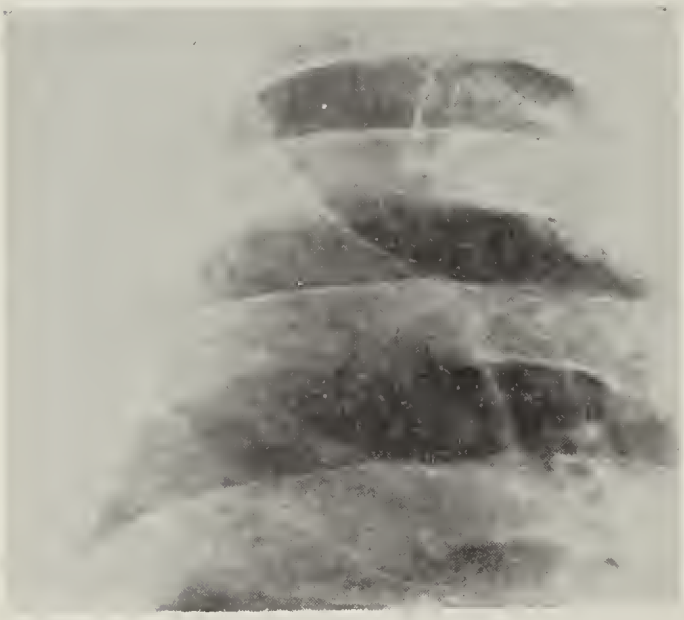

Figure 6a (Case 6). Close-up shows a small rounded area of increased density over the scapular edge in the right second I.C.S. with some increased markings.

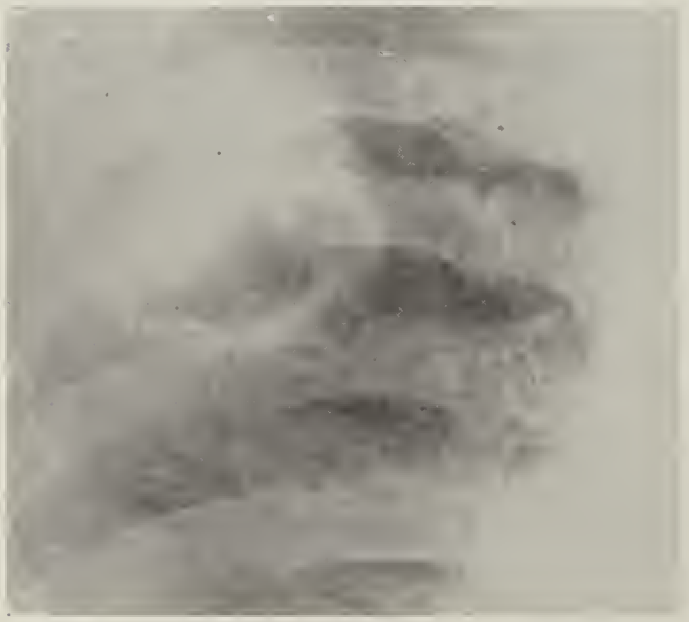

Figure 6b (Case 6). Same area as before eleven months later with a 5 centimeter area of infiltration and central necrosis and fluid level. Exploration revealed a squamous cell carcinoma.

In conclusion, widespread use of the newer methods of chest survey and the more frequent use of the chest roentgenogram by the clinicians has resulted in pictures of chest disease more early than have been customarily described in the textbooks. We must not wait for the typical appearance of lung cancer, pneumonia or tuberculosis to develop on the roentgenogram before a diagnosis is made and the proper treatment instituted. With the development of the antibiotics the acute infections of the lungs are treated successfully before any positive bacteriology is obtained and it has become standard practice with acute pulmonary infections to treat them in this manner. More chronic lung disease, such as cancer, is now being found in the asymptomatic stage, but it is frequently not being recognized. To improve the results of treatment of lung cancer earlier surgery will have to be accomplished and the public generally will have to be educated to the fact that it is the asymptomatic case that stands the best chance of a cure. The profession should be made aware of the fact that early cancer of the lung is similar to early tuberculosis in that it can be seen on a roentgenogram before it produces symptoms.

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A Sound Approach to Congenital Dysplasia of the Hip*

RICHARD D. HAWKINS, M.D.†
Biloxi, Miss.

MANY INFANTS that present very definite signs of congenital dysplasia of the hip during the first few months of life are not treated because the physician feels that the diagnosis is equivocal and that the x-ray is not quite confirmatory. The physician then recommends that the patient be observed and a period of watchful waiting is instituted. It is felt that as a result of this prevalent attitude many infants are rendered a grave injustice. Evidence will be presented to support this point of view.

The diagnosis of congenital dysplasia of the hip during the first few months of life has been adequately discussed recently by Hart[1]; Pray[2], and Hawkins[3]. It would be repetitious to go into great detail in describing the early symptoms, signs, and x-ray findings. Therefore, the important aspects of diagnosis will be presented in summary form.

DIAGNOSIS

Definition: An interruption of normal growth forces of the rapidly growing cartilaginous and ligamentous tissues which form the skeletal structures of the hip joint (capsule, fibro-cartilaginous limbus, ligamentum teres, musculotendinous structures, femur and innominate bone).[4]

History: Usually the history is of little aid in infants under six months of age. At times the mother may offer the complaint of difficulty in spreading the legs at diapering, less movement of one leg or an asymmetrical appearance of the legs. There appears to be a close relationship between congenital clubfoot and hip dysplasia (55 per cent of 364 cases of hip dysplasia had associated clubfoot).[5]

Physical Findings:

1. Shortening or contracture of the adductor muscles, tendons and fasciae of the hip.
    a. Limited abduction of thigh.
    b. Less movement of affected extremity.
    c. Apparent shortening.
    d. Tilting of pelvis.
    e. Asymmetrical skin creases and folds of thighs.
    f. Rotational attitude of extremity is variable and of little value. Extremity is often held in an adducted and flexed attitude.
    g. Asymmetry of the labia.
    h. Lateral prominence of hip.
    i. There may be "a feeling of telescoping" of the flexed hip due to the plasticity of the capsular and cartilaginous structures.
    j. Absence of pain and inflammation.
2. Displacement of head of femur from acetabulum.
    a. Passive abduction may or may not be limited.
    b. Telescoping is often possible with hip flexed.
    c. Shortening from knee to pelvis with the hip flexed.
    d. Jerk or click sign of Ortelani is pathognomonic. Most frequently present in neonatal period when hormonal influences produce relaxation of ligamentous and musculotendinous structures.

X-ray Findings (Fig. 1): Film should be

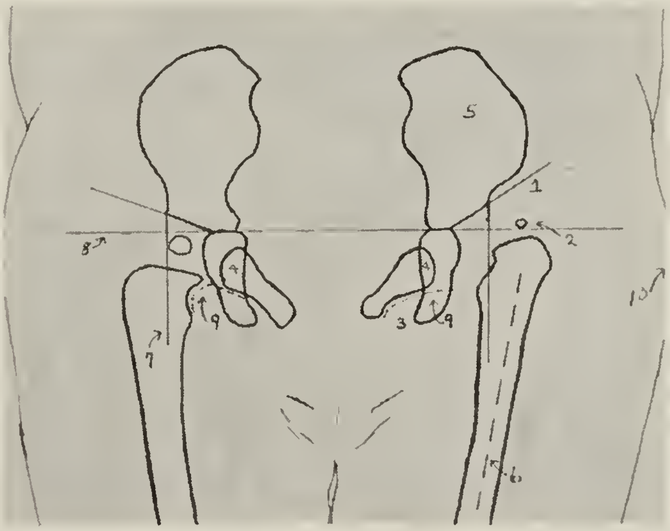

Fig. 1—

1. Increased acetabular index
2. Dysplasia of capital epiphysis
3. Delayed closure of ischio-pubic juncture
4. Deformity of U-figure or tear drop shadow
5. Hypoplasia of ilium
6. Adduction of affected extremity
7. The vertical line (Perkin's line)

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*Presented before the Section on Pediatrics at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

†From Children's Clinic, Biloxi, Miss.

8. The horizontal Y line (Hilgenreiner's line)
9. Obturator-coxofemoral line (broken on left)
10. Prominent contour of affected hip

taken in a supine position with extremities parallel, the hips extended and the patellae facing upward. Center tube in midline directly over superior border of pubis.

1. Acetabular dysplasia.
   a. Increased acetabular index (30 degrees or above[3]).
   b. Irregularity of acetabulum.
   c. Distortion of U figure or tear-drop shadow.
2. Dysplasia of head of femur.
   a. Delayed appearance.
   b. Decrease in size and density.
   c. Irregularity.
3. Hypoplasia of pelvis (ilium).
4. Delayed closure of ischio-public juncture.
5. Adduction attitude of extremity and pelvic tilt.
6. Displacement of femoral head.
   a. Upward displacement of head; subluxation (Bruce's measurement).
   b. Lateral displacement of head; luxation (Bruce's measurement).
   c. Broken obturator-coxofemoral curve.
   d. Telescoping of hip.

NATURAL COURSE

The incidence of congenital dysplasia of the hip is difficult to determine. Pray[2] reports an incidence of 0.7 per cent in a period of 3½ years in a general pediatric clinic. Plummer[6] found an incidence of 2.2% of congenital dislocation in 227 Japanese infants followed from 9 months of age to 25 months of age. It is at least obvious that this condition occurs not infrequently. The crippling results of dislocation are well known by all physicians and the early recognition is the responsibility of the general practitioner and the pediatrician. Not only must the physician be cognizant of the findings leading to an early diagnosis but also a complete understanding of the sequelae is a necessity.

The future course of a dysplastic hip has several possibilities: 1) spontaneous recovery, 2) persistent dysplasia of acetabulum without displacement of femoral head and without symptoms, 3) persistent dysplasia of acetabulum without displacement but with dysplastic osteochondrosis and traumatic osteoarthritis in adult life, 4) partial displacement of femoral head (subluxation) with development of arthritis deformans, malum coxae senilis and degenerative hip disease in adulthood, 5) complete displacement of femoral head (luxation), 6) dysplasia of capital epiphysis or coxa plana (Legg-Perthes disease) may be the only evidence of hip dysplasia.

There is little doubt that a rather high percentage of dysplasias spontaneously recover and become asymptomatic. In Fig. 2 is shown an interesting case taken from Hart[4]. The first x-ray (Fig. 2a) was taken at age one year and there is unequivocal evidence of dysplasia of the left hip with luxation. Abduction treatment was refused at that time. The child was seen again at age 4½ years at which time there was no clinical or x-ray evidence suggesting dysplasia (Fig. 2b). This is indeed striking evidence of complete recovery with absolutely no treatment.

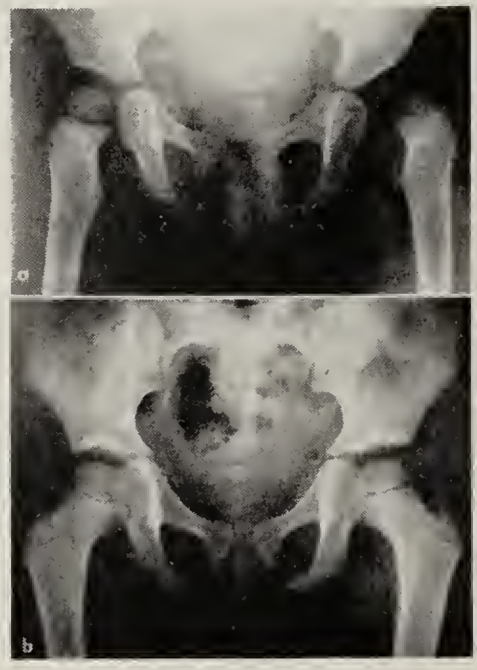

Fig 2-A—Shows x-ray of patient at age one year. B reveals complete recovery at age 4½ years without treatment. (From Hart[4]; reproduced by permission of publisher.)

The x-ray shown in Fig. 3 is that of a young woman who complained of fatigue of left hip and a mild limp when tired. One will note a

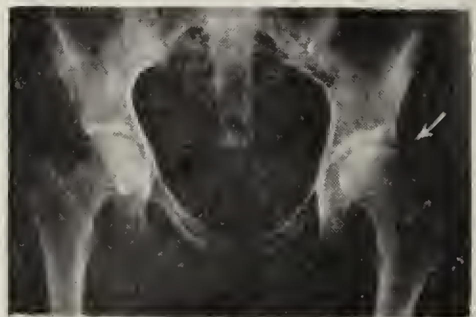

Fig. 3—Illustrates dysplasia of left acetabulum without displacement of femoral head. (From Hart[4]; reproduced by permission of publisher.)

shallowness of the left acetabular cavity with a broken obturator-coxofemoral curve and sclerosis of the acetabular roof without any femoral head displacement. This patient's sister is disabled by a congenital hip dislocation. Symptomatic dysplasia of the acetabulum without displacement is well illustrated by this case (from Hart[4]). Dysplasia of the femoral head may occur alone or in association with acetabular dysplasia. (Fig. 4). Jansen in 1923[7] discusses coxa plana as the "satellite" of congenital dislocation. Coxa plana or Legg-Perthes' disease is often the result of congenital dysplasia of the femoral head and this pathogenesis should always be considered along with infection, vascular interruption, and trauma in this condition.

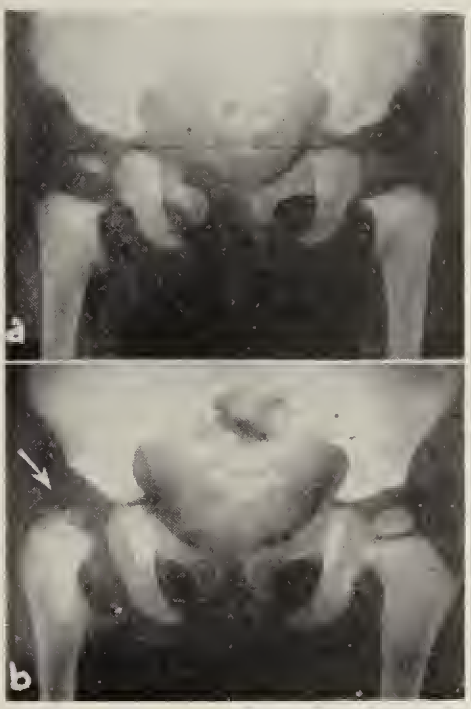

Fig. 4-A—Reveals dysplasia of left femoral head without acetabular dysplasia. B shows both acetabular and capital dysplasia. (From Hart[4]; reproduced by permission of publisher.)

Subluxation or partial displacement of the femoral head is the most common occurring form of congenital dysplasia of the hip. It is a common entity at all ages. Subluxation can remain as such throughout life, and it most commonly does, or it can gradually or suddenly progress to luxation. Figure 5a is an x-ray of a 41-year-old female who had had no hip symptoms until age 39 years. Severe pain in the left hip region brought her to the physician. The x-ray shows partial displacement of a deformed femoral head with a broken obturator-coxofemoral curve and signs of osteoarthritis. Her sister had bilateral dislocation of hips. (from Hart[4]). Figure 5b is an example of bilateral subluxation in a 17-year-old high school girl. Note also the coxa valga, coxa magna, and osteochondritis dessicans.

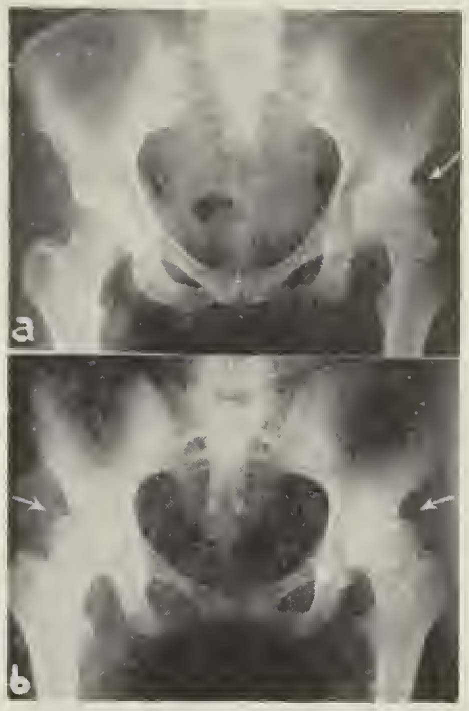

Fig. 5—Reveals subluxation in adulthood. These two patients were symptom-free during childhood. (From Hart[4]; reproduced by permission of publisher.)

A little boy 21 months was brought in because of a limp on right side, which he had had since the onset of walking at age 11 months (Fig. 6).

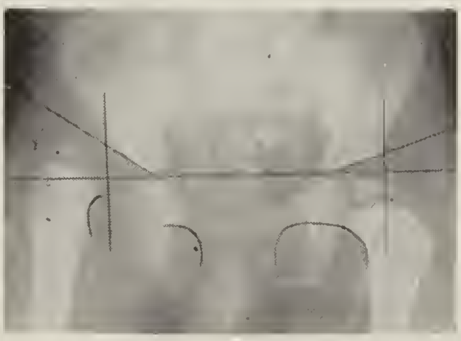

Fig. 6—A 21 month male, showing complete luxation.

The x-ray signs of luxation or complete dislocation are obvious in this film, which illustrates the effect of weight-bearing on a dysplastic hip. The problem of treatment in this case was, to say the least, perplexing; but remember that weight-bearing does not always lead to such an obvious and severe deformity. Dysplastic hips should be treated before weight-bearing not only to prevent dislocation, but also to prevent the many early and late sequelae which are more common than dislocation.

CORRECT APPROACH

It has been shown that dysplastic hips can spontaneously recover without treatment and this no doubt occurs frequently. However, the simplicity and superior results of treatment during the first few months of life make it pure folly for one to assume that treatment is not an absolute necessity in every suspicious case.

In many clinical conditions an approach of conservative watchfulness is a wise attribute. In congenital dysplasia of the hip this approach is prevalent but not well-founded. In 1951 the author examined a female infant age eight hours and definite clinical signs of dysplasia of the left hip were found (Fig. 7a). The consulting orthopedist was not sure of the diagnosis and suggested waiting and observing. When the infant was again seen at age five months, the x-ray findings were dramatic (Fig. 7b). Abduction and flexion without immobilization during the neo-natal period would have been simpler, less expensive and would have yielded superior results as compared to abduction and immobilization in a cast at five months.

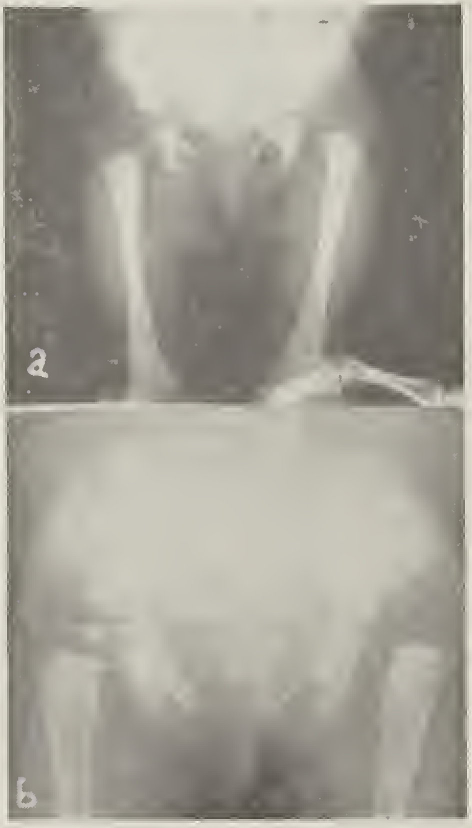

Fig. 7-A—Shows female age 8 hours with definite x-ray signs of dysplasia on left. B reveals progressive luxation in face of no treatment (age 5 mos.).

B. H., female age nine months, was seen with the chief complaint that several different doctors had been suspicious of congenital dislocation of the hip, but that none had suggested treatment because they were not absolutely sure of diagnosis. At four months she was seen by a well-qualified orthopedist who felt that the diagnosis of dysplasia was questionable and recommended that the infant be rechecked at age one year. She was found to have limited abduction of right hip, shortening from knee to pelvis on right with thighs flexed, asymmetry of skin creases with elevated right gluteal fold and demonstrable telescoping of flexed right thigh. X-ray (Fig. 8a) at this time revealed acetabular index of 30 degrees on the right, broken obturator-coxofemoral curve, hypoplasia of right ilium, adduction attitude of right thigh, tilted pelvis and partial displacement of right femoral head. The patient was referred to an orthopedist who concurred in the diagnosis and the child was treated. She was in a bilateral plaster spica for eight months, then in a flexion-abduction brace for three months and has since worn an abduction bar (past two months). It appears that this patient is getting excellent x-ray results (Fig. 8b) and it is hoped that functional results will be likewise good. If treatment had been commenced during the early months of life, one year of immobilization and torment would have been saved this infant.

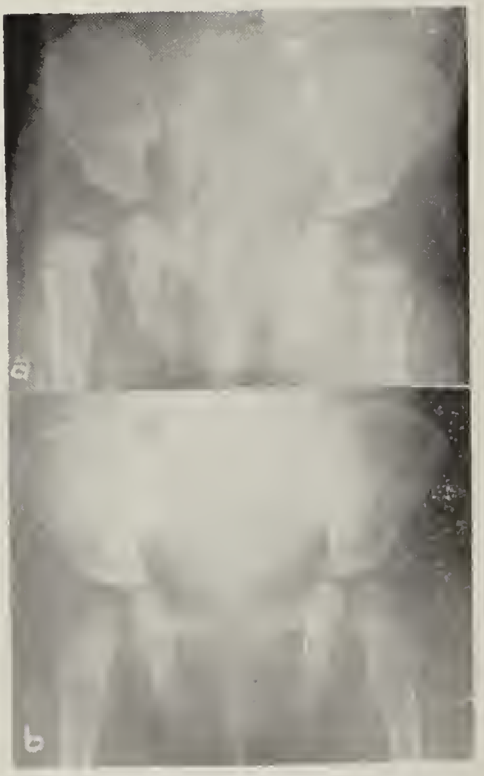

Fig. 8—An example of unnecessary waiting. A shows x-ray at age 9 mos. before treatment. The x-ray shown in B was taken after one year of treatment.

Gill[8] states that approximately 35 per cent of hips treated during the first three years of life may be expected to become excellent. He did not separate this series by age groups or as to weight-bearing or non-weight-bearing. He does state that chances of good results decrease with advancing age. The chance of securing a normal hip decreases with each advancing month of age, particularly after weight-bearing has begun. Weight-bearing in the infant begins with creeping which has its onset around seven months. Simple abduction without immobilization treatment during the early postnatal period prevents subluxation, dislocation, coxa-plana, osteochondrosis, osteoarthritis, adhesions, contractures, and much suffering.

The pertinent facts to be considered are: 1) the ease of treatment for the infant, mother, and physician during the early months of life; 2) the excellent results when treated early; 3) the difficult, expensive and torturing treatment after six months of age and 4) the relatively poor results with late treatment. These facts should bring forth the attitude that the physician should not ponder or mark time because he is not completely sure of the diagnosis. The diagnosis is not based on clinical findings or confirmatory Roentgen findings, but on the total picture. Unless your suspicions are totally eliminated, one should begin treatment.

SUMMARY

An evaluation of the course of congenital dysplasia of the hip reveals that an affected hip can spontaneously recover without treatment or can progress to varying sequelae. The sequelae are subluxation, luxation, coxa-plana (Legg-Perthes disease), osteoarthritis, arthritis deformans, coxa-valga, and osteochondritis dessicans.

The general practitioner and the pediatrician are the key men in solving this problem. Early recognition and early treatment are a necessity in the prevention of the crippling sequelae.

The physician should not ponder or mark time because he is not completely sure of the diagnosis. The observatory period often permits the development of sequelae. Unless suspicions are totally eliminated, one should begin treatment.

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Antihistaminics in Allergic Conditions of the Ear, Nose and Throat*

D. W. HAMRICK, M.D.
Corinth, Mississippi

In a recent lecture at the Memphis Academy of Ophthalmology and Otolaryngology Dr. Frances Lederer said, "This is the antibiotic era of medicine." It might just as aptly be said, "This is the antihistaminic era in the field of allergic therapy."

Physicians Desk Reference of Pharmaceuticals 1953 lists more than a hundred antihistaminic preparations. I dare say that there is never a day in your practice when some of the antihistaminic drugs are not prescribed. Do you prescribe them empirically, or are they merely placebos for the want of something better? Unfortunate exploitation of these valuable drugs by both press and radio, and their over-the-counter sale by our drugstores has misled the public in their usefulness, and confused the physician in their administration.

What are the antihistaminics? What is their pharmacologic action? What are the ear, nose and throat conditions in which these preparations are applicable? Which one of the antihistaminics is most suitable for that particular patient? What are the limitations of these new therapeutic agents in our field of practice? These are some of the questions which I trust we can throw some light on in this discussion.

As a background for our discussion let us review the origin of this group of drugs. Histamine was first isolated by Dale and Laidla[1] by separating it from histidine, one of the amino acids, and they demonstrated that the phenomena of anaphylaxis could be produced by injecting this into the body. Then Best[2] and his associates proved it was normally found in the body by extracting it from lung and liver tissue. Code proved that 90 per cent of histamine in the body came from white blood cells, mainly basophils. Acetylcholine which is produced in the body by stimulation of the para-sympathetic nervous system when injected intravenously into the body was also proved to produce anaphylaxis (Harkness)[3]. Histamine was proved to be liberated in the body as a result of cell injury. Fourneau and Bovet in 1933 demonstrated that certain phenolic ethers counteracted histamine *in vitro* and *in vivo*. Bovet[4] later demonstrated that ethylenediamine and aminoethyl ethers both neutralized histamine. These discoveries are the basis of our antihistamine drugs (Harkness).

What Is the Action of This Group of Drugs?

It is generally conceded that their principal action in the body is that of blocking agents of histamine. As Hansel[5] summarized in his book, *Clinical Allergy*, to appreciate this statement one must consider the pharmacologic action of histamine in the body. Histamine acts as a powerful vasodilator, is urticariogenic, produces a marked drop in blood pressure, is a powerful stimulant of gastric secretion, stimulates the secretory glands, causes contraction of uterine muscle and causes a contraction of the muscles of the bronchial tree.

Whether the blocking action of antihistaminics takes place at the neuromuscular junction preventing the formation of acetylcholine with attendant prolonged vasodilatation, cell injury and the liberation of histamine, or whether it takes place by coating over the cell receptors as described by Selye is not clear.

Pharmacology of the Antihistamines

1. Acetylcholine blocking action.
2. Depression of sensorium with resultant drowsiness (may stimulate in young children).
3. Stimulation of peristalsis in small doses—depression of peristalsis by large doses.
4. Vasoconstriction of capillary bed.
5. Anti-urticariogenic.
6. Atropine-like action on parasympathetic nervous system thus causing dryness of mouth, nose and bronchial tree, reduced perspiration and mild broncho-dilatation.
7. Slight leucopenia.
8. Local anesthetic action.
9. No demonstrable effect on blood pressure.
10. No demonstrable effect on adrenal-cortical response.
11. Sedative effect on vestibular apparatus.

What Antihistaminic Shall One Use?

There are many considerations. The severity of the condition, the age and activity of the patient, the psychogenic or nervous stability of the patient, gastro-intestinal stability, and last but most important a clinical trial on one of the antihistamines since there is such a marked variation in individual response to these drugs.

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*Presented before the Section on Eye, Ear, Nose and Throat at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

There are two general classifications of these drugs, both of which may be helpful in choosing between the best antihistaminic for the individual case. The first of these is the chemical classification of Seyler and Marsh[9] of the University of Louisville. They divide them into four main groups based on their chemical linkage. The basic formula found in almost all the antihistaminic drugs is: $R\text{-}CH_2CH_2N(CH_3)_2$

This latter is dimethylamino ethylene. The R in this compound represents any slightly basic large radical usually containing the benzine ring which makes up three-fourths of the molecular weight. The dimethylamino portion $N(CH_3)_2$ is primarily responsible for the blocking action. The linkage between the R portion and this dimethylamino ethylene portion is the basis of their classification.

The four groups are:

1. $R - (O)CH_2CH_2N(CH_3)_2$
2. $R - (N)CH_2CH_2N(CH_3)_2$
3. $R - (CH_2)CH_2CH_2N(CH_3)_2$
4. Miscellaneous.

Examples of each group are:

GROUP I—Benadryl, Decapryn, Dramamine, Caladryl.

The oxygen molecule in the attachment in this group causes the most toxicity and drowsiness, and it is classed second in antihistaminic blocking action.

GROUP II—Phenergan, Neo-Antergan, Neo-Hetramine, Pyribenzamine, Thenylene, Histadyl, Tragathen, Pyrrolazote.

The nitrogen linkage in this group produces the strongest blocking action and much less drowsiness but may cause G. I. upsets.

GROUP III—Trimeton, Chlor-trimeton, Coricidin.

The methyl linkage gives the third best antihistaminic or blocking action, the least toxicity, and rather prolonged action.

GROUP IV—Thephorin, Antistine, Diparalene, Perazil.

Is a miscellaneous group which varies the dimethylamino ethylene group, but is thought that all of these break down in the body forming the dimethylamino ethylene group. They are less potent in their blocking action, more often cause wakefulness than drowsiness, cause few other toxic reactions and are more prolonged in their action.

The clinical classification of Feinberg is as follows:

CLINICAL CLASSIFICATION (Feinberg)[7]

GROUP I, less potent and less sedative

Drug	*Average Dose*
Antistine	100 - 200 mg.
Perazil, Diparalene	50 - 100 mg.
Neohetramine	100 - 200 mg.
Thephorin	25 - 50 mg.
Co-pyronil	15 mg.

GROUP II, potent and moderately sedative

Drug	*Average Dose*
Chlorothen (Tagathen)	50 mg.
Chlor-trimeton	4 mg.
Diatrin	25 - 50 mg.
Histadyl	50 - 100 mg.
Neo-Antergen	50 - 100 mg.
Pyribenzamine	50 mg.
Pyrrolazote	50 mg.
Trimeton	25 mg.

GROUP III—Trimeton, Chlor-trimeton, Coricidin.

Benadryl	50 mg.
Decapryn	25 mg.
Phenergan	25 mg.

What is the criteria for considering antihistamine therapy? Is the underlying condition allergic? The finding of an increased number of eosinophils in nasal, post-nasal or bronchial secretions plus a good history at least suggests the answer.

What Are the Ear, Nose and Throat Conditions That Are Generally Accepted As Having at Least an Allergic Background?

Hay fever or seasonal pollinosis, allergic rhinitis, angioedema, mucous membrane and general manifestations of drug sensitivity, the common cold, the early manifestations of which are generally allergic, secretory otitis media, bronchial asthma, recurrent sore throats, especially nasopharyngitis with post-nasal discharge, some cases of impairment of hearing especially in children, acute and chronic hoarseness, some cases of croup in children, vertigo, chronic discharging ears with a central perforation and a mucoid secretion as described by Koch[8], and many so-called cases of chronic sinusitis.

If histamine were the only factor involved in allergic reaction, we would have in the antihistaminics the perfect drugs—a specific. Unfortunately as Hansel[9] points out, "Allergy is a disease of adaptation to our environment and affects practically every tissue in the body, and both the immunological and general adaptation syndrome of Selye must be correlated in the picture. A specific blocking agent is not the most important factor in the treatment of allergic conditions, and neither is the performance of a group of skin tests and the administration of a series of injections of allergenic agents. The problem becomes an over-all medical one of combining blocking agents, specific agents, and general measures such as controlling infections, glandular imbalances and nutritional disorders."

Since there is no constant variation of histamine content in the body between and during acute allergic attacks, a blocking agent is not the whole answer (Harkness)[10].

What Clinical Results May One Expect from Antihistaminic Therapy?

Relief of symptoms only may be said in most cases. By their blocking action of histamine, their vasconstrictor action, their atropine-like action, their effect on the vestibular apparatus, their anti-urticariogenic action, their sedative action, they allay nervousness, dry secretions, relieve burning and discomfort by their anesthetic action, have a marked action on lymphatic stasis in angioedema, block the spasmodic effect of histamine and afford some relief in many cases of bronchial asthma especially in children. Their most dramatic relief is seen in cases of seasonal hay fever especially of wind-blown trees and grass pollens (Hansel)[11]. They should in the conditions enumerated be combined with chemotherapy to combat infection, specific antigenic therapy, and general measures.

We may expect in the future more and more combinations of the antihistaminic drugs with other therapeutic agents such as Wyeth's bicillin, the combining of antihistaminics with antigenic extracts, and other agents. This is a most promising field.

SUMMARY

1. The historical background and pharmacology of the antihistaminics is discussed.

2. A basis for selection of the proper antihistaminic for the particular case is suggested.

3. Ear, nose and throat conditions in which at least a measure of relief may be expected from the antihistaminics is considered.

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You can get along with a wooden leg, but you can't get along with a wooden head. It is the brain that counts, but in order that your brain may be kept clear you must keep your body fit and well. That cannot be done if one drinks liquor, which breaks down the command of the individual over his own life and his destiny.—Charles Mayo

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Bulletin Board Objectives: 1) to broaden your medical society's service for scientific, technical, and professional progress; and 2) to support policies and principles which in effect will heighten public esteem and understanding of the medical profession.

Sepsis of the Newborn with Hemolytic Jaundice: A Case Report

JOHN D. COFFEY, JR., M.D.†
Natchez, Miss.

Sepsis of the newborn, a disease resulting from bacterial invasion of the blood stream, is a condition frequently undiagnosed because of the variability of the clinical picture. Since the advent of effective chemotherapeutic and antibiotic drugs it is especially important to look for this disease in young infants who are sick.

Fortunately it is relatively rare due to improved aseptic hospital technics but it is still frequent enough to warrant suspicion in newborns who present any of various signs and symptoms. There may or may not be a temperature elevation, *often not*. There are vague symptoms at the onset: listlessness, disinterest in nursing, whining, occasional vomiting; later, apathy, weight loss, atony and sometimes diarrhea. These infants *look sick*. In more violent cases there are hemorrhagic manifestations, hemolytic jaundice, erythematous rashes (likely to be confused with drug rashes), twitchings, convulsions, dyspnea and cyanosis. Some of these symptoms may be due to localization of the infection in specific tissues, while others are the general effects of septicemia. The white blood count may be high with increased polys but not always. Anemia and a positive blood culture are usually found.

The most frequent portals of entry are the umbilical stump, the respiratory, genito-urinary, and gastro-intestinal tracts, and skin, salivary, and mammary gland infections, tooth bud infections, otitis media and the like.

The most common causative organisms are Staphylococcus (micrococcus), Streptococcus, pneumococcus, and the coli-aerogenes and paratyphoid group. Pseudomonas aerogenosa and diplococcus crassus have been found in some cases.

Parmelee[1] states that the symptoms are inconstant. The diagnosis is made on suspicion by obtaining blood cultures on sick newborns and searching for localized sites of infection, including spinal taps which often reveal meningitis in a sick infant even without signs of meningeal irritation. Hemorrhagic manifestations and icterus are strong indices for suspecting sepsis. Five typical cases are reviewed by Parmelee in his book to illustrate the above points.

Silverman and Homan[2] reported twenty-five cases in the first month of life without preceding major illness, collected over an eleven-year period at Baby's Hospital in New York. There was a high incidence of males in this series. Fever, jaundice, and pylonephritis were the most common manifestations. Coliform organisms were the most common causative agents. Of clinical interest is the finding of an increased lymphocyte count in sterile cerebrospinal fluid in five of these cases.

Kangos[3] reported eleven cases of sepsis in infancy, three diagnosed ante mortem, eight postmortem, with nine deaths. There were congenital anomalies in three (37.5 per cent). His review of the literature revealed a similar incidence of associated congenital anomalies in other series. Kangos states that erythroblastosis fetalis is the most common condition to be ruled out. Congenital toxoplasmosis[4], which commonly causes jaundice, should also be considered in the differential diagnosis, especially if there are signs of central nervous system disease.

Cardullo, Schulman and Smith[5] report one case of Diplococcus crassus septicemia in a premature infant who recovered on penicillin, sulfadiazine, and aureomycin.

Daniels and Anderson[6] report two cases of septicemia due to E. Coli, one five-year-old who died, one four-month-old who recovered on streptomycin.

Spinelli[7] reports a Staph. aureus septicemia in an infant one week old who came in with no fever, only green stools. He was given sulfadiazine, but developed multiple abscesses, osteomyelitis, and pyoarthrosis. Penicillin effected a cure.

Starr and Holliday[8] observed seven cases of neonatal sepsis, three of which presented erythema multiforme as an early physical finding. They state that the presence of an erythematous rash in the newborn should not be lightly dismissed and should be regarded as a possible indication of septicemia.

In 1947 Parmelee[9] in a round table discussion of sepsis in the newborn reported ten cases. Portals of entry were as follows: umbilicus—three; subcutaneous fatty tissue—two; salivary gland—one; undetermined—four. There was metastatic spread to the meninges in three, peritoneum in two, bones in two, and lungs in three. Six of these infants died. The causative organisms were determined in seven cases: Staphylococcus in four, E. coli in three. The symptoms in these cases were misleading and included vomiting, diarrhea, convulsions, severe icterus, melena, ecchymoses and petechiae. The importance of careful handling of newborns by the hospital staff was emphasized.

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†From the Department of Pediatrics, Natchez Medical Group, Natchez, Mississippi.

Proper management of these cases should include careful search for portals of entry and localized infections, obtaining a blood culture on admission and a spinal fluid examination when indicated, and the beginning of combined antibiotic therapy with penicillin and streptomycin and sulfadiazine until a bacteriological diagnosis can be made. Antibiotic sensitivity tests are valuable in deciding which antibiotic is to be used in definitive treatment. The antibiotic or chemotherapeutic drugs of choice should be continued until the patient is clinically well for several days and until two blood cultures have been negative. Supportive therapy should include parenteral fluids when oral intake is inadequate and, most important, transfusions of whole blood in amounts to correct anemia and as a general supportive measure. The dose for a transfusion should be about 10 cc. per pound of body weight.

CASE REPORT: F. S., white female infant born July 16, 1953, was admitted to the Natchez General Hospital on July 25, 1953, with a history of disinterest in nursing, lethargy and the development of a yellow skin color over a two-day period. This child had a normal delivery of a young primipara, had been breast fed since birth and had had no difficulties. Birth weight was 8 pounds, 2 ounces. The child weighed 8 pounds, 8 ounces on admission. Physical examination revealed an atonic sick infant with a distinct yellow color to the skin, conjunctiva and mucous membranes. There were scattered petechiae on the chest and abdomen. The umbilical stump was crusting with a slight exudation of pus. After obtaining the admission laboratory test including a CBC, catheterized urinalysis, blood culture, icterus index, and a direct Coombs Test[10] and blood for cross matching, the child was placed on sodium penicillin G, 100,000 units every three hours and dihydro-streptomycin, 100 mg. every six hours; 85 cc. of whole blood and 85 cc. of dextrose 2½% in half-strength Ringer's solution were given intravenously and repeated the next day; 11.5 cc. of sodium sulfadiazine 5% given subcutaneously and repeated in twenty-four hours. Vitamin K,5 mgm. mixed with Vitamin C 100 mgm., was given intramuscularly.

Admission laboratory work was reported as follows: Hgb. 11.3 gms., RBC 4,690,000, WBC 26,600 with 3% Eosinophils, 30% Segs., 46% Lymphocytes, 21% Monocytes; urinalysis—chemical and microscopic was negative, urinalysis for bilirubin was negative. Icterus Index was 83.2 and a direct Coombs Test was negative. A repeat urinalysis for bilirubin was negative on July 26, 1953, and on July 28, 1953. Blood culture showed hemolytic staphylococcus aureus (micrococcus). A disc plate sensitivity test showed a high degree of sensitivity to penicillin and moderate sensitivity to other antibiotics including streptomycin, chloramphenicol, aureomycin, and terramycin. The organism was resistent to polymixin. The subsequent blood cultures taken on July 27, 1953 and July 29, 1953 were negative.

The child's entire hospital course was afebrile, there being no temperature elevations over 100. After reports of the blood culture and sensitivity tests were obtained, dihydro-streptomycin was discontinued (on July 28, 1953) but penicillin was continued until August 2, 1953. The icterus index on July 29, 1953 had fallen to 48 and the hemoglobin was up to 13.9 gms. The infant was discharged on August 2, 1953, and followed up in the office. She has done well and at the last visit on September 23, 1953, she weighed 15 pounds, 2 ounces, and is developing normally and has shown no indication of illness.

This case is presented, not because it represents anything unique in diagnosis and management of sepsis in the newborn, but only to emphasize that such a disease entity does occur in the newborn without fever or the ordinary symptoms and signs of infection and that the appearance of jaundice in a young infant should cause one to consider sepsis in the differential diagnosis.

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Sixey per cent of excessive drinkers come from an entirely normal origin. They are not seeking release. They are conforming to certain habits in their set—E. M. Jellinek.

New Problems in Communicable Disease Control*

A. L. GRAY, M.D., M.P.H.
Jackson, Miss.

A SIGNIFICANT COMPONENT of the total history of man relates to the struggle between man and the communicable diseases. Wars have been lost and nations have fallen because of the destructiveness of communicable disease. Zinsser[1] states in his book *Rats, Lice, and History* that "Typhus, with its brothers and sisters—plague, cholera, typhoid, and dysentery—has decided more campaigns than Caesar, Hannibal, Napoleon, and all the inspector generals of history." Despite the marked reduction in some of the communicable diseases, all that ever existed in the civilized world remain constant hazards to the world population in varying degrees. I cannot recall a single disease which has been eradicated from the world population. Some have been drastically reduced and others apparently temporarily eradicated in limited geographic areas of the world. These favorable changes can be attributed both to improved economic status and consequent living standards and to medical and public health discoveries and techniques. The medical and public health aspects of control in regard to any disease are composed in final analysis of two phases as follows: The amount of the infecting agent being transmitted within the population and the amount of specific resistance or antibody against the infecting agent present in the mass population influenced by the general index of health. It is these two aspects that physicians and public health workers are directly concerned with and responsible for. Whatever the method of approach in control, it always has as its final objective favorably altering one of these basic factors. This alteration may result in either reducing severity, deaths, or prevalence.

Many scientific discoveries have been developed in the past few years which have influenced or can influence either the amount of infection being transmitted within a population unit or the specific and general resistance of the recipients of the infecting agents. These discoveries have been in the form of diagnostic aids, causative organisms, therapeutic procedures, immunizing materials and procedures, and epidemiological studies. These findings have brought nearer the possibility of temporary or permanent control only to the extent that they may be applied to a large proportion of the total world population most likely to develop these diseases. It is true that these discoveries have solved some of the problems that had to be solved for partial or complete control of a given transmissible disease or group of diseases. It is equally true that each discovery which adds to control possibilities creates new problems that must be solved before maximum effectiveness of the discovery in question can be realized. An example of this truism is a quite recent discovery of the effectiveness of immune globulin preventing or favorably modifying poliomyelitis in susceptibles in communities where polio exists. The problems arising from this one discovery are of tremendous proportions, namely: How do we get enough of this product? How could the susceptible population get the material administered two or three times each summer even if an adequate quantity of the globulin was available? Another question in regard to this product is whether it would be a sound policy even to try to administer globulin of very temporary effectiveness to a large segment of the total population even if adequate material and facilities were available to make it possible and to continue to do this each polio season.

One of the problems involved in and arising from the current effective reduction of a communicable disease is the obvious fact that when a given large population is almost or completely free from a contagion over a period of one or more generations, such a population develops decreasing natural immunity and ability to produce it thereby becoming ultimately completely susceptible when the disease is again introduced. This situation can only be met by two approaches which require continued constant vigilance in preventing reintroduction of the disease or causing the population to develop its own specific immunity by artificial means. At any rate the communicable disease history of the world points up the fact that when a disease is reintroduced in a population which has been free of this disease for many years it runs rampant as to both morbidity and mortality unless the population has been kept artificially stimulated to produce immunity.

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* Presented before Hygiene and Public Health Section, Mississippi State Medical Association Meeting, May 14, 1953, Hotel Buena Vista, Biloxi, Mississippi.

In the last three years here in Mississippi perfect examples of another modern problem has arisen. With a reduction in typhoid fever from 2600 cases in 1920 to 58 in 1950, public health workers, physicians, and the population became complacent and decided that control by immunization and reducing amount of infection could safely be reduced. Complacency is a serious modern problem even when control is available. From 58 cases in 1950 the disease jumped to 171 in 1952 becoming the major public health problem in some counties and threatening to do so in many more. Do you suppose that syphilis will continue its downward trend and finally become extinct if the attitude of complacency now developing continues to the point that it is felt that the problem no longer exists? Have the sex habits of the population changed enough to justify a feeling of smugness about syphilis? One component of complacency is a decreasing index of suspicion or open-mindedness on the part of physicians as a given disease declines. This leads to sporadic cases and even small outbreaks going unrecognized or diagnosed until other cases and outbreaks have resulted from the index case or outbreak. Some diseases have been eradicated for a period of many years from given geographic areas but these diseases remain constant hazards as mass immunity declines and complacency increases.

One of the more recent problems in control of a specific communicable disease relates to tuberculosis. Tuberculosis deaths have gradually declined in Mississippi and elsewhere for many years but over 400 Mississippians will die of it in Mississippi this year. There are over 5000 known cases in the state now and probably between 1200 and 2000 of these are active at a given time. Between 400 and 500 cases are in the Mississippi State Sanatorium at a given time leaving between 700 and 1500 cases to be cared for in their homes serving as constant prodigious sources of infection to associates. These are not new problems but recent discoveries in effective chemotherapy create very practical problems to be solved, otherwise these new discoveries will be meaningless. I am sure you know that within the past three or four years it has been demonstrated that streptomycin, PAS, and isoniazid in combination have a profound effect in reducing productiveness of tubercle bacilli, promoting health, reducing fever, and improving the general physical condition of most active cases of tuberculosis. In some cases apparent arrest develops as a result of these drugs. This by no means suggests that sanatorium care is no longer essential. On the contrary it makes sanatorium care comprised of rest, diet, education, and surgery even more rapidly effective so that those admitted to the sanatorium have much better chance of more rapid arrest.

These drugs seem to offer the first opportunity presented to physicians and health workers to reduce by chemotherapeutic means the infectiousness of these cases who cannot be admitted to the sanatorium and also to promote arrest in at least some of them. Public health workers are much more concerned with reducing the quantity or dosage of tubercle bacilli being transmitted than reducing the frequency of transmissions of bacilli. On the basis of extensive sanatorium use and some home use of these drugs in the treatment of tuberculosis it is believed that all cases of active tuberculosis not in the sanatorium should be placed on home treatment with them and kept there to reduce infectiousness and promote the welfare of the patient. The probable usefulness of these three drugs in home treatment of tuberculosis presents at least two new major problems. The first of these is the mobilization of resources accompanied by essential education to make it possible to apply this new approach to all those not in the sanatorium. Actual cost of the drugs per patient per month will range near $8.00. For many such cases this cost will have to be borne by interested agencies. The streptomycin must be given twice per week in the home of the patient at varying distances from a physician's or health department's office. The treatment must be prolonged over many months and to get patients to accept this will require constant educational persuasion. However, if this treatment will markedly reduce infectiousness and improve the physical status of most patients, it is the kind of approach which has been needed for many years to help solve the problem. It is hoped that it will act as a partial therapeutic "isolation" for many patients who could not be hospitalized.

A serious new problem which is likely to arise as a result of efforts to treat tuberculosis at home with drugs is the likelihood of cases in general and the public as a whole assuming that this approach of home treatment can replace sanatorium care. This would be a dangerous assumption and might well defeat the overall possible adjunctive usefulness of home treatment in the long-run. No one has suggested that home treatment be substituted for sanatorium care for any patient admissible to the sanatorium and all concerned should guard against trying to substitute chemotherapy in the home for sanatorium care.

A discussion of this type certainly should not ignore the probability of very recent origin of bacterial and viral organisms or their toxic products being used in the war which threatens us. Biological warfare against military and civilian populations in a world conflict is conceded by authorities to be not only possible but feasible with considerable likelihood of its use. As to specific organisms or products which might be effectively broadcast on military or civilian populations en masse, there are several possibilities. This was not considered as a serious threat until the more recent developments in bacteriology, long distance air transport, and atomic warfare. Samples of the questions which naturally arise are: What would be the impact of mass spraying of large areas of this country with types of bacteria or virus with which our population has had no previous experience such as plague bacillus? You recall there is a very fatal type of pneumonic plague which is transmissible by direct contact? Could psittacosis organisms be blanketed over considerable areas of the nation by aerosol clouds and produce mass illness? What could prevent large population concentrations being prepared by atomic blasts for many types of mass infection by air, water, and food? These questions only serve to emphasize the possible hazards of modern warfare in a world threatened by communism which will likely stop short of no end to gain its purpose.

Another problem of quite recent origin is that of diagnosis of typhoid fever in those having this disease but who are placed on antibiotic therapy before diagnosis. Chloromycetin, aureomycin, and terramycin are notable for their ability quickly but temporarily to kill typhoid bacilli in the gastrointestinal tract and blood stream so that diagnosis by culture after such therapy becomes impossible. Apparently this rapid killing of typhoid bacilli also reduces the immunologic response to the bacilli manifesting itself in slower production of agglutinins. This further complicates confirmation of diagnosis. Despite this it is quite a common practice among physicians to start antibiotic therapy when the clinical picture includes sustained fever and before determining the cause. Evidence available indicates that part of the marked increase in typhoid fever in 1952 was directly related to masking the diagnosis of the disease with antibiotic therapy before the cases were diagnosed and in some instances without suspicion of typhoid fever. Secondary cases arise from the original undiagnosed cases and the original cases could be diagnosed only by epidemiological evidence of a circumstantial nature. Certainly antibiotic therapy in typhoid fever is indicated but this should be withheld until stool and blood specimens have been secured for culture. Evidence was also collected last year that some cases of typhoid were ill for many days and under care of their physicians without being suspected because of the low index of suspicion based on complacency which in turn resulted from the disease in recent years. As a result of this, family and community outbreaks of several cases developed before control measures were applied. It should be remembered that there now exists in the Mississippi population one typhoid carrier for each 2000 to 3000 people which can act as the spark to initiate an outbreak in a population with a lowered mass immunity.

It is quite probable that an effective active immunization agent against polio will be available within a year or two in the form of a vaccine. Research findings to date justify this statement. When it is available, the problem will then present itself as to how to apply it to between thirty million or forty million of the most susceptibles of the total population. The demand will likely be beyond facilities to meet it until most of the population under 20 years has had an opportunity to receive it. This is another example of the solution of one major problem promptly creating others. Certainly the prevention of polio by immune globulin is not the solution to the polio problem. Availability of only limited quantities of this product currently creates a very serious problem in public relations, education, and allocation. Rationing the limited supply to the groups in whom it might be most effective is difficult. There is not enough for general mass use and since this is true it is difficult to place in the most strategic groups as relates to exposure, age, and geography. This difficulty is based on the feeling of the average mother that when a case occurs in the community, her child is exposed. Rationing cannot be based on the term "intimate contact" because both words in this phrase would be defined in many ways by physicians and people in general depending on fear and other factors.

Acute infectious hepatitis is not necessarily a new problem but of recent months rapidly increasing numbers of cases are coming to light and considerable research is being conducted on this disease. It is an acute infectious disease caused by an unidentified filterable virus which is transmitted from person to person by personal contact and by contaminated food and drink. The gastro-intestinal tract seems to be the primary reservoir of the virus and the virus leaves the human host primarily in excreta. The incubation period ranges around 10 days but may be much longer. Onset[2] may be abrupt or gradual with fever, almost complete loss of appetite, malaise, fatigability, headache, chilly sensations, nausea, vomiting, pruritus, dark urine, light stool, distress in right upper abdomen, liver tenderness and enlargement, and later jaundice. These symptoms vary greatly in frequency and severity from patient to patient resulting in marked variation in total severity and duration from a very mild short unrecognizable illness to a very severe attack of several weeks. The newer problems in regard to this disease in Mississippi are in the form of new opportunities. Since it is now coming to light with much greater frequency, it behooves physicians to watch for it with keener perception and wherever possible to ferret out relationship of cases with other cases and with environments which need improvement. It is now known that pooled immune serum globulin has much protective value in contacts of known cases when given before onset of symptoms. Since all ages are susceptible, globulin should promptly be given all family contacts of proved cases insofar as the limited supply will permit. The amount of globulin allotted to Mississippi currently and in the future will depend to a considerable extent on how well physicians diagnose and report the disease. The amount of globulin now available for Mississippi is relatively small because other states have been more diligent in reporting the disease. Globulin now in sight is adequate only for household contacts of known cases.

Unfortunately, there is no specific laboratory confirmatory test which can generally be applied for diagnosis. Certain liver function tests and other laboratory tests do add circumstantial evidence for diagnosis but diagnosis must be based primarily on clinical picture and epidemiological evidence. Ordinarily for each severe case recognized other mild subclinical cases will be found when sought for.

In conclusion some of the newer problems or new aspects of old problems in regard to communicable diseases have been presented in a limited way. These presentations point to the ever present hazard of contagion and indicate the solution of one problem in regard to a disease usually creates other problems rather than being the final solution to total control of a given disease.

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A HAND TALKING CHART

It is hard to imagine a more distressing situation than to find oneself unable to talk as a result of a cerebral vascular accident. When Dr. Hamilton Cameron of New York fell victim to temporary motor aphasis which resulted from a cerebral embolus following a coronary thrombosis, he determined to do something to enable such patients to communicate with others. He designed 20 signs which can easily be made by one hand, and which are easy to understand. He has had these signs printed on a chart, which he is glad to send without charge to all doctors and nurses taking care of aphasic patients, or to hospitals, institutions, or homes at the request of the doctor or nurse in charge.

No doubt every doctor who reads the *Mississippi Doctor* has or will have patients who would be helped by this chart. Requests for the hand talking chart should be sent to Dr. Hamilton Cameron, Apartment 3LL, 601 Cathedral Parkway, New York City 25, N. Y.

Chronic Constrictive Pericarditis

RUSH E. NETTERVILLE, M.D., F.A.C.S.
and
BENJAMIN P. FOLK, JR., M.D.

Jackson, Miss.

CHRONIC CONSTRICTIVE pericarditis is a very disabling disease; fortunately, it is not common. In 1949, Emile Holman[1] reported 265 cases collected from the literature which had been treated surgically. Of this group, there were 22 deaths on the operating table and 48 early postoperative deaths. Forty-four were improved and 118 were reported to be restored to normal health.

Because of certain interesting features, the following case is reported. J. M., white, male, age 17 years, became acutely ill on November 19, 1950 with a sore throat and consulted his private physician. A sulfonamide drug was prescribed. After a two-day febrile course he developed epigastric pain. He was admitted to the Natchez General Hospital, Natchez, Mississippi, under the care of Dr. G. S. Hicks. An x-ray of his chest on November 21, 1950 (Figure 1) revealed slightly enlarged cardiac shadow without evidence of pericardial effusion. A flat plate of his abdomen was normal except for slight enlargement of the liver and spleen. The pain persisted and 16 hours after admission a laparotomy was performed. Culture of the exudate failed to reveal any organism. Penicillin and streptomycin were administered postoperatively.

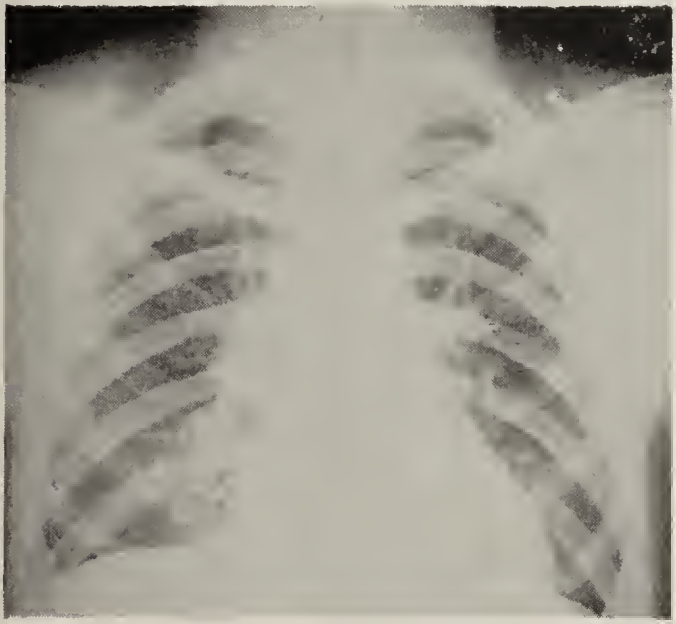

Fig. 1. An x-ray of chest made two days after onset of acute febrile illness revealing slightly enlarged cardiac shadow without evidence of pericardial effusion.

The postoperative course was stormy. A pericardial friction rub was heard for the first time on the first postoperative day. The epigastric pain persisted. Cyanosis was noted. On the seventh postoperative day an x-ray demonstrated pericardial effusion (Figure 2). Venous pressure at this time was 230 mm. of water. A pericardicentesis yielded 130 cc. of purulent fluid. Smears demonstrated Gram positive cocci. A pericardicentesis was performed every two or three days. The pus was thick, but could be aspirated through a 20-gauge needle. Despite frequent aspirations, the pericardial sac became progressively larger. The patient developed pulmonary congestion and a left pleural effusion (Figure 3). Cultures of the pleural fluid were sterile. The patient was transferred to the Mississippi State Charity Hospital, Jackson, Mississippi, on January 18, 1951.

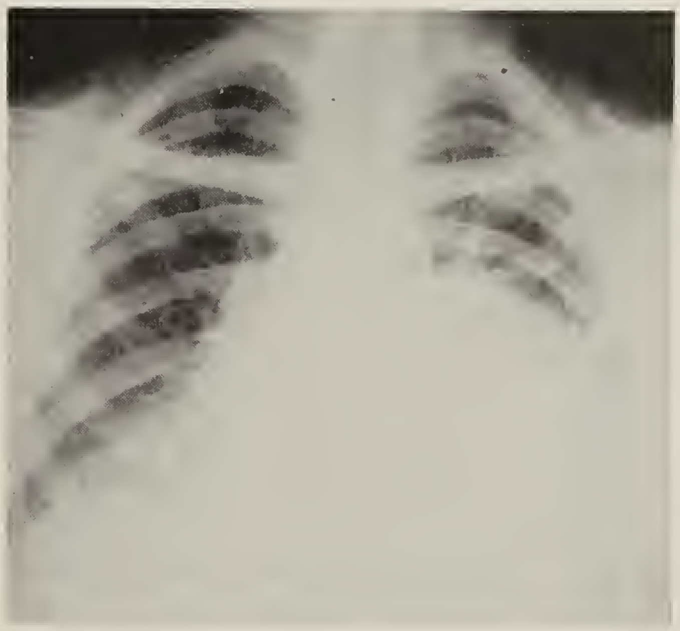

Fig. 2. An x-ray of chest made 11 days after onset of illness revealing markedly enlarged cardiac silhouette compatible with pericardial effusion.

Upon admission the patient's temperature was 9 degrees F., pulse 100, respiration 24, blood pressure 130/102 mm. HG. He was well developed and fairly well nourished. He was dyspneic, orthopneic, and cyanotic. The neck veins were markedly distended. Cardiac dullness was increased well beyond the mid-clavicular line. The heart sounds were distant. Neither pericardial rub nor

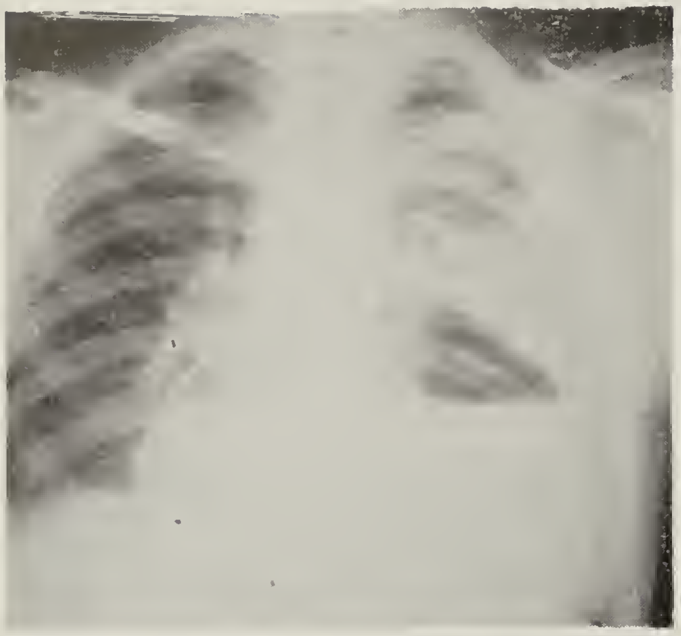

Fig. 3. An x-ray of chest taken 25 days after onset of illness revealing fluid level.

significant heart murmurs were heard. The abdomen was distended with free fluid. The liver and spleen were enlarged. There was moderate edema of the lower extremities and of the presacral area.

Laboratory studies—4,470,000 red blood cells per cu. mm.; 13 grams of hemoglobin per 100 cc.; 7,300 white blood cells per cu. mm. The sedimentation rate was 20 mm. per hour corrected (Wintrobe). Urinalysis: Specific gravity 1.015; albumen negative; sugar negative; 3-5 white blood cells per high power field, red blood cells, none.

The patient was given penicillin, 100,000 units, every four hours and streptomycin 0.5 gms. every six hours. He was given a salt-free diet. Mercuhydrin was given intramuscularly every four or five days. On January 30, a pericardicentesis was done and 180 cc. of straw-colored fluid was obtained. One tenth gram of dihydrostreptomycin was placed in the pericardial sac. The same day an abdominal paracentesis yielded 1800 cc. of transudate. On February 12, 100 cc. of fluid was obtained by pericardial paracentesis. All fluids obtained by aspiration were cultured and were sterile. No tubercle bacilli were found on guinea pig inoculations. Studies of the cellular sediment of the ascitic fluid were negative for tumor cells. Biopsy of axillary lymph node was done on March 16, 1951, and was reported as showing chronic lymphadenitis.

Because of his progressive and marked deterioration, his toxic appearance with anorexia, a trial of cortisone therapy was considered advisable. This was begun on March 16, 1951, 100 milligrams every 8 hours intramuscularly for two days then 50 milligrams every 12 hours which was continued until April 29, 1951. Penicillin was discontinued on March 14, 1951, and streptomycin on March 19, 1951. On this treatment there was gradual and steady improvement. After an initial weight gain from 180 pounds to 188 pounds, the weight gradually decreased to 160 pounds at the time cortisone was discontinued. The patient developed a moon face. Upon discontinuance of cortisone there was a further drop in weight to 143 pounds on May 18, 1951.

By June 13, it was felt that he had reached maximum improvement although he was still dyspneic on exertion; the liver and spleen were still enlarged. A chest film made on June 13, 1951, still revealed marked enlargement of the cardiac shadow (Figure 4). The findings at this time, consisting of increased venous pressure, enlarged liver and spleen, marked ascites with minimal pleural effusion and paradoxical pulse, indicated the principal difficulty to be interference with the venous return to the right side of the heart and throttling the diastolic filling of the right auricle and ventricle. Operative intervention to relieve this condition was deemed advisable.

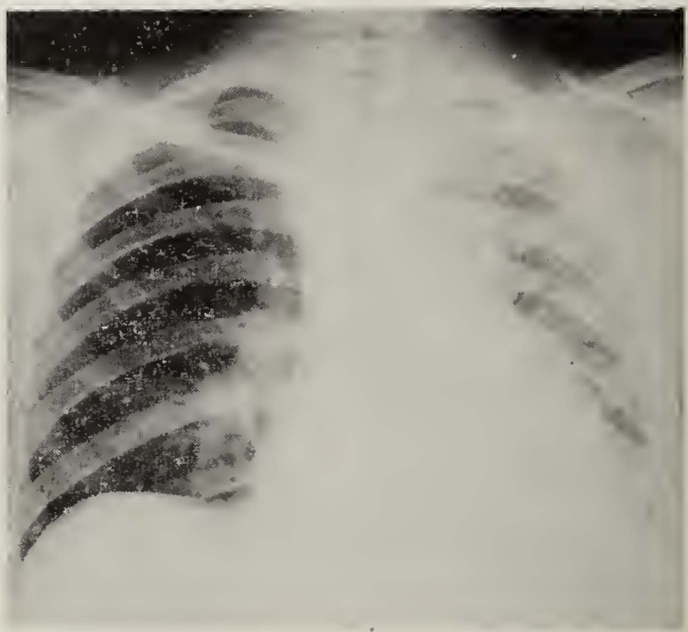

Fig. 4. An x-ray of chest made approximately seven months after onset of illness and immediately prior to pericardiectomy revealing persistent enlargement of the cardiac silhouette.

On June 13, 1951, a pericardiectomy was done under endotracheal anesthesia. A sternal splitting approach was made because it was felt that this would give the best exposure to the right side of the heart. The sternum was split from the xiphoid process to the level of the second intercostal space and transected at that level. The heart was found to be covered with a one-fourth-inch-thick fibrous sheath which was not calcified. This sheath apparently constricted the superior and inferior vena cavae, the right auricle and the right ventricle. The left pleural cavity was entered and there were many adhesions between the left lung and the parietal pleural. There was an accumulation of about 300 cc. of clear fluid superior and to the left of the heart. This fluid was found outside the fibrous sheath, and was thought to be loculated fluid in the mediastinal pleura. The thickened fibrous pericardium was then removed from the anterior surfaces of both ventricles, the right atrium, and from both the superior and inferior vena cavae. There was very little thickening of the epicardium.

When the dissection was started, the heart appeared to bulge through the opening created in the fibrous covering. The wall of the right atrium was inadvertently torn in two places for a distance of 3 to 4 mm. during the dissection. Bleeding was controlled without difficulty.

Electrocardiographic tracings taken at intervals throughout surgery revealed only occasional premature ventricular contractions. No alterations in the electrocardiographic complexes were effected by surgery.

Catheter drainage of both pleural cavities was provided and connected to a water trap. The sternum was approximated with 28-gauge stainless steel wire sutures. The periosteum and the skin were closed with silk. During the operative procedure, the patient received 2500 cc. of citrated blood. The patient withstood the procedure very well.

Specimens of the resected pericardium were studied microscopically and described by Dr. F. G. Bratley as follows:

> "The sections were composed of loosely arranged, edematous-appearing, collagenous, fibrous tissue which in most areas is diffusely infiltrated by small numbers of polymorphonuclear leucocytes. There is diffuse hemorrhage into the tissue but this may have been produced at operation. In some areas there are moderate numbers of small blood vessels and in other areas, vascularity is slight and collagen is abundant. The appearance of the changes in the tissue is non-specific and is compatible with a diagnosis of polyserositis."

Postoperatively, penicillin and streptomycin were exhibited. After the second postoperative day, his temperature remained below 100 degrees F. He had oliguria for three days and then developed a normal urinary output. The patient developed frequent premature ventricular systoles on the fourth postoperative day. Pronestyl was used to control this. On the seventh postoperative day, the patient still had dyspnea at rest and there was definite evidence of fluid remaining in the peritoneal cavity. A precordial friction rub was noted at that time and persisted for several days.

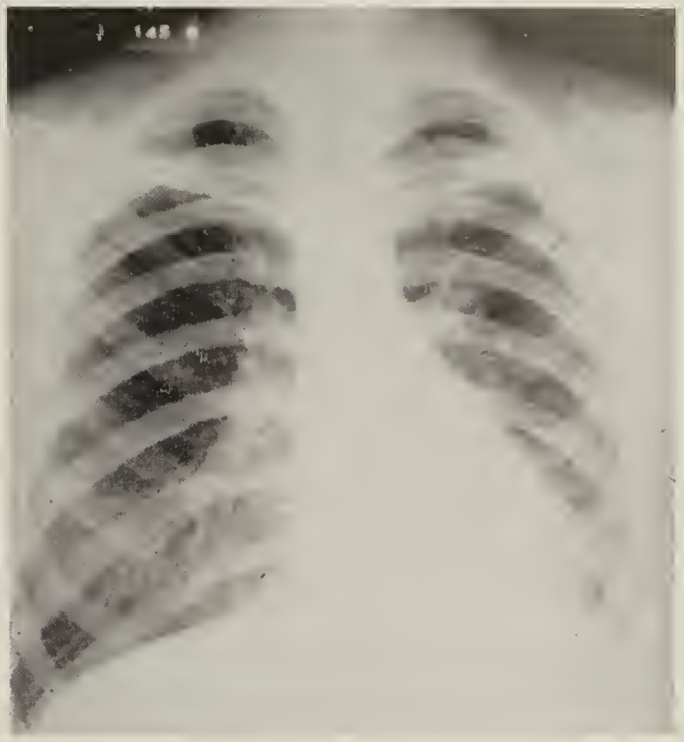

Fig. 5. An x-ray of chest made 23 months following pericardiectomy showing the heart to be normal in size.

The wound healed without incidence. The patient was discharged from the hospital, ambulatory, on July 3, 1951. While there was no demonstrable peritoneal fluid at that time, the liver and spleen could still be palpated.

Improvement continued after discharge. When seen on August 1, 1951, only occasional pains were present in the right upper quadrant of the abdomen and right flank. Dyspnea had diminished and he could walk two blocks without difficulty. His blood pressure was 124/78 mm. Hg., pulse was 104 per minute, weight 154 pounds. The heart was not enlarged, no murmurs were present. There was no evidence of free fluid in the abdomen. The liver was palpable just below the subcostal margin. There was slight ankle edema.

When seen seven weeks later he was able to climb steps normally. His liver was not palpable and there was no evidence of peripheral edema. The patient had returned to school in September and was able to take a full course. When seen on July 18, 1952, he was working as a salesman in a department store which work required him to carry boxes up and down stairs. He was able to do this with only slight difficulty. His heart was of normal size, cardiac sounds were normal and his blood pressure was 118/70. A final x-ray of his chest taken on May 11, 1953, revealed no evidence of cardiac enlargement. There was obliteration of left costo-phrenic angle and heart was displaced slightly to the left. (Figure 5).

SUMMARY:

A case of constrictive pericarditis is presented. This patient was observed in two hospitals during the entire course of his disease from the onset with purulent pericarditis until fibrous pericarditis developed and pericardiectomy became necessary. Postoperatively, the patient returned to a normally active life.

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1. Holman, Emile, and Willett, Forest, *The Surgical Correction of Constrictive Pericarditis*, Surg., Gynec. & Obst., 89: 129, August 1949.

What About Poliomyelitis?

(*Guest Editorial*)

A. L. GRAY, M.D., M.P.H.
Jackson, Mississippi

Poliomyelitis in Mississippi has declined markedly in 1953 compared to 1951 and 1952. In 1951 a total of 732 cases was reported while in 1952, a total of 712 cases was reported. In 1953 through November 21, 329 cases were reported indicating that the total for 1953 will be approximately half that of each of the preceding two years. The national experience has been similar to that of Mississippi for 1953. Through November 14, 1952, 53,795 cases had been reported in the nation but for the same period in 1953 only 33,331 cases had been reported.

There is scientific reason for real optimism that ultimate control in the not too distant future. Discoveries within the last three or four years point to this. While many bits of research findings served as foundation for the more important discoveries, a few concrete recent findings seem of very great significance. One of these is definite determination that at least three distinct antigenic types of polio virus exist and that neither of these produces antibody which offers material protection against the other two. These three types are Brunhilde, Leon, and Lansing. This has very great significance in producing a vaccine for active immunization.

Another discovery of considerable significance is that in those individuals infected with polio virus and destined to develop the disease a viremia exists for up to five days before any symptoms develop. This likely has considerable importance in the possibility of prevention and modification with chemotherapeutic and immune blood serum and its fraction immune globulin.

This discovery explains why immune globulin demonstrated some effectiveness in preventing and modifying paralysis in epidemic areas during the last three summers as reported by Hammon and others after their extensive and intensive field trials of this product. Based upon their favorable findings, globulin has been made available during 1953 on a national basis to all familial contacts of acute cases. In the latter part of the polio season, globulin has been made available even more extensively to include intimate contacts of cases regardless of membership in families where cases occurred. Prospects for 1954 are that globlin for polio prophylaxis will be somewhat more plentiful than in 1953. Physicians will be notified by the State Board of Health as to the extent of availability for 1954. The National Foundation for Infantile Paralysis, American Red Cross and National Office of Defense Mobilization have provided this globulin and the state and county health departments have distributed it.

Apparently an effective vaccine for active immunization of the susceptible age groups is the greatest need in control. Solution of this problem has been one of the long-term objectives of extensive research under sponsorship of the National Foundation and other sponsors. Before a vaccine could be developed, a very difficult problem had to be solved—polio virus had to be grown in relatively pure culture rather cheaply in the laboratory. This hurdle has been for the most part negotiated so that now a killed vaccine is being produced. This vaccine has been developed by Salk and co-workers and has been given to enough human subjects to prove its safety with reasonable satisfaction. Polio antibody studies at intervals following this vaccine in human subjects show a satisfactory antibody response to the vaccine. In experimental animals given the vaccine

(Continued on page 252)

BOOK SECTION

INSTALLMENT 6

Atlas of Rush Pin Technics

LESLIE V. RUSH, M. D.
Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

This is the sixth of a series of monthly installments to be published in *THE MISSISSIPPI DOCTOR* during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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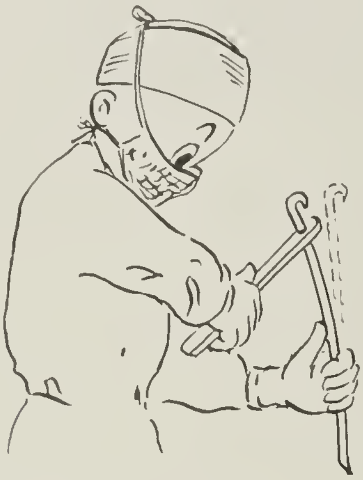

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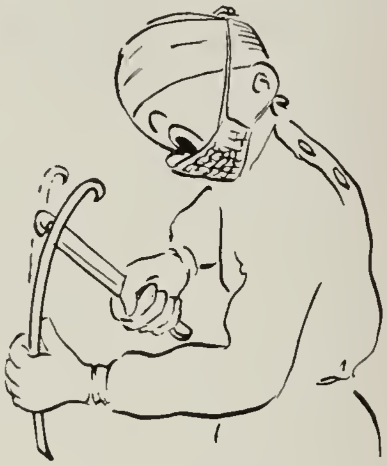
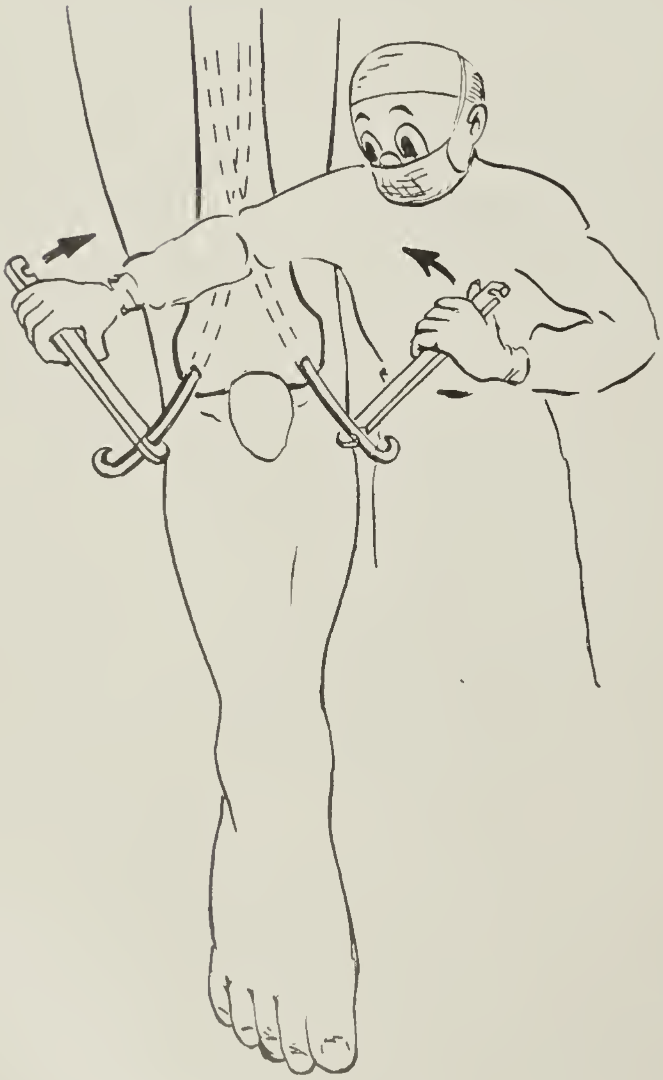


ALWAYS



13

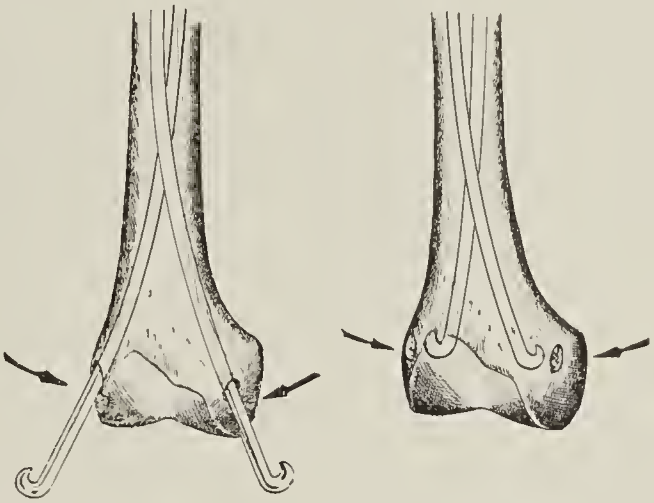
USE OF BENDING IRON

It now should be apparent that medullary pinning is not a stereotyped procedure to be indiscriminately applied. One must deal constantly with dynamic forces. The results can be brilliant or disastrous, dependent upon the intelligence with which these forces are utilized. We humbly beg that no surgeon embark upon this course without thoroughly acquainting himself with the important factors involved and the potential dangers that may not at first be recognized.

The bending iron can play an important role in this drama of dynamics. At times a slight curve properly applied to a pin can make the difference between union and non-union. It might be desirable to give a slight curve to the entire pin, or perhaps only the head or the pointed end needs preshaping. These points will be developed as specific fractures are discussed.

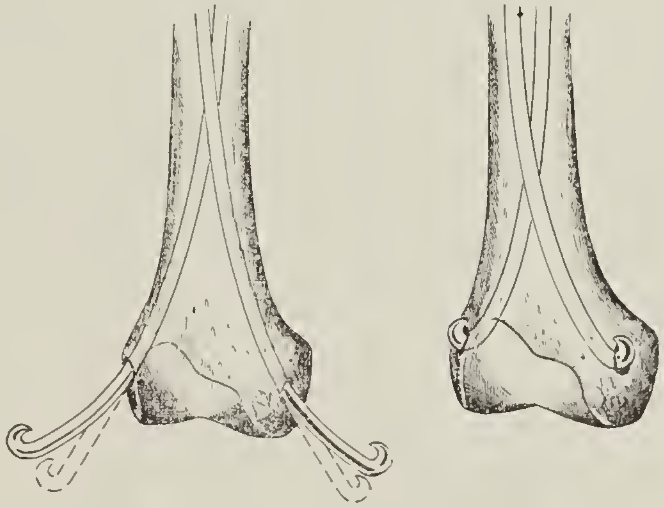
There is one general rule worth remembering—when a pin is to be preshaped, the convexity of the curve is always in the direction opposite that of the hook and the point.

Migration of Head by Pressure



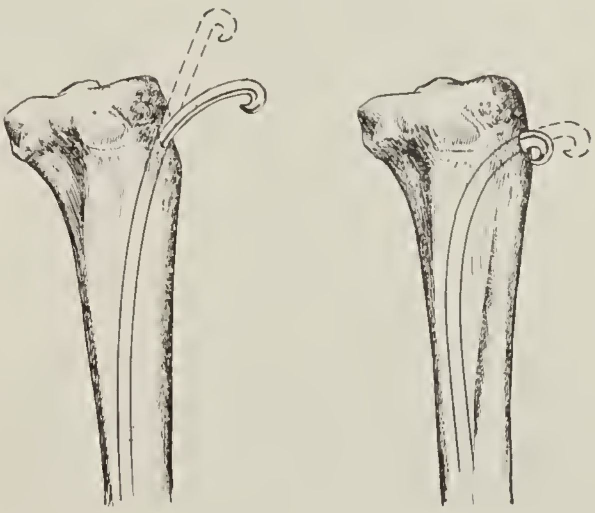
A straight resilient pin entering a bone in this manner is forced into a curve, continuously exerting pressure at three points. The pressure exerted in a medial direction by the head of the pin can cause it to sink gradually into the substance of the bone to such a degree that it cannot be removed. This tendency is most conspicuous when a pin is introduced through the sides of the large condyles. It must be especially guarded against in the osteoporotic bone of the aged.

Stress Relieving Head

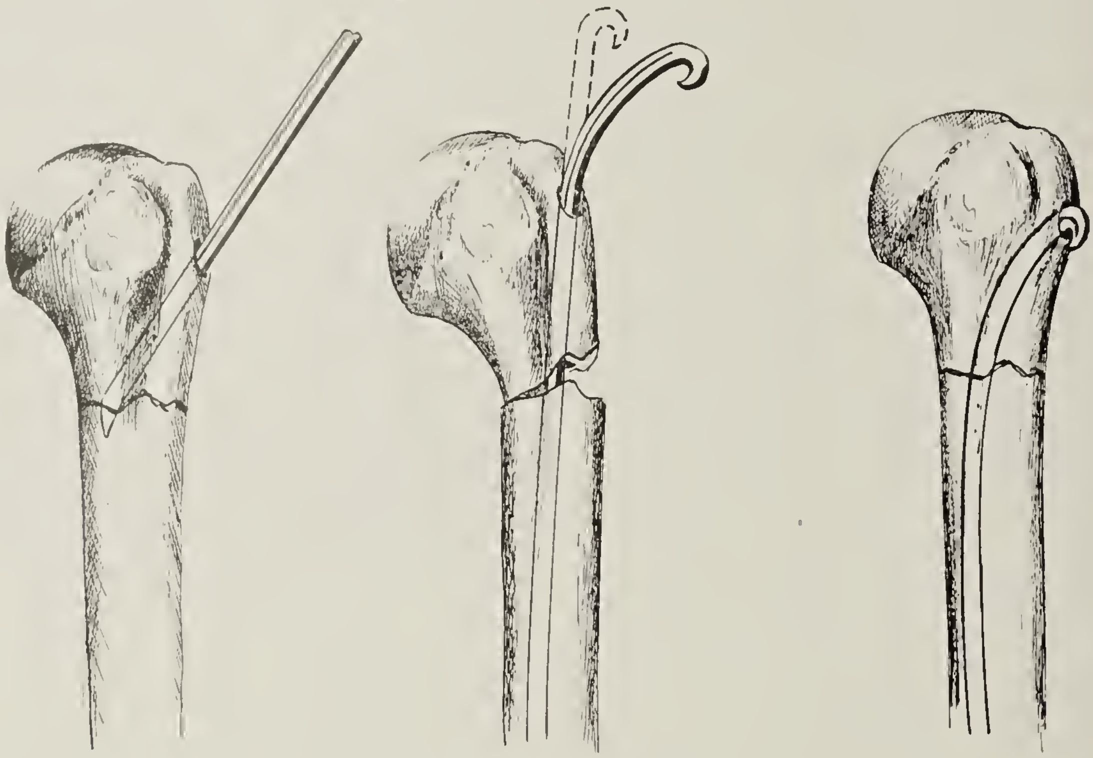


If the head portion of the pin is given a slight curve with the bending iron, it can be made to conform more accurately to the contour of the bone. So doing relieves the spring-like tension and the heads remain in proper position.

Too Much Bend

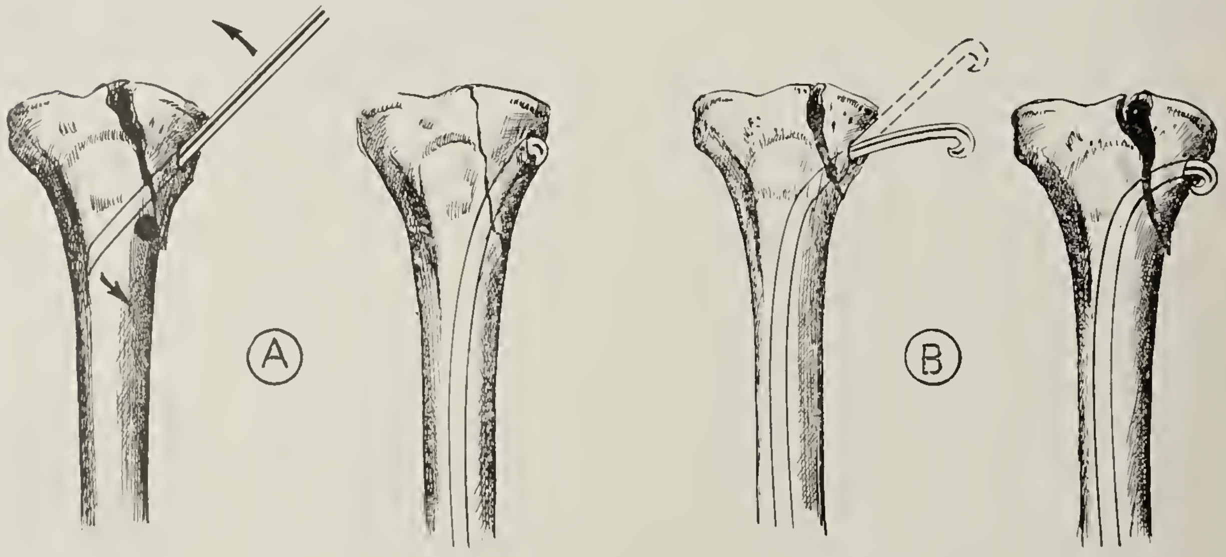


In other regions the tendency for the heads to sink into the bone substance is less marked but can be very noticeable in the thin bones of elderly and debilitated individuals. A very slight bend at the head end might remedy this situation, but if too much curve is given the pin, the stable purchase on the fragment might be lost and the head of the pin become too prominent in the soft tissues and contribute to mechanical irritation.



To Compensate for Angulation

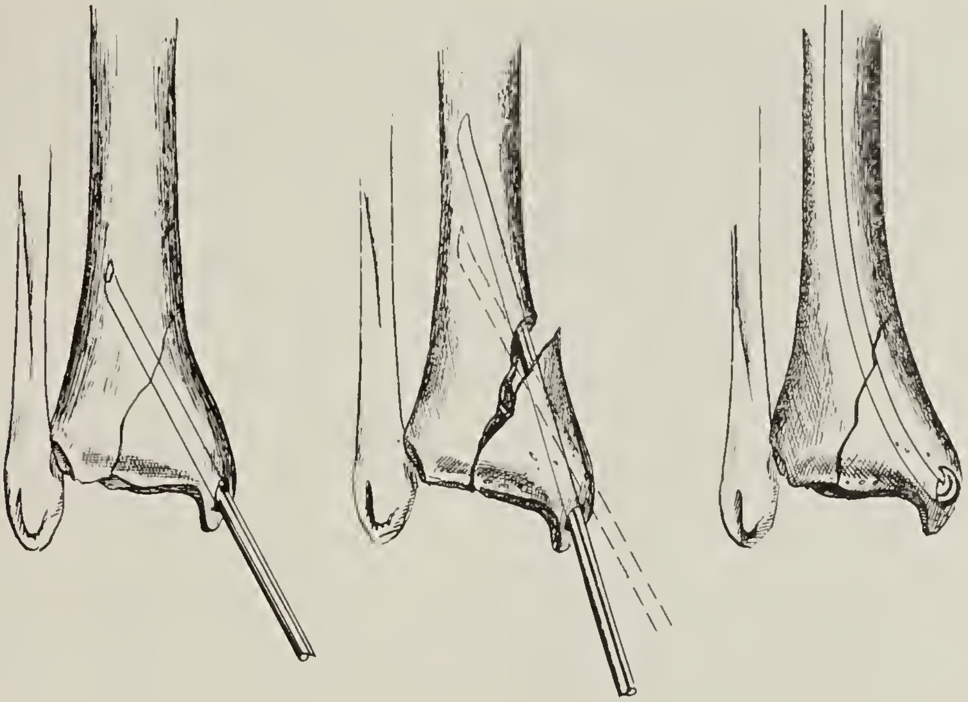
When a pin enters a short fragment at the wrong angle, angulation of the fragment occurs as the shaft of the pin travels down the medullary cavity of the bone. This deformity might be corrected by giving a curve to the pin at a level corresponding to that of the fracture. A better procedure would be to withdraw the pin and reinsert it at the proper angle.



Vertical Fractures

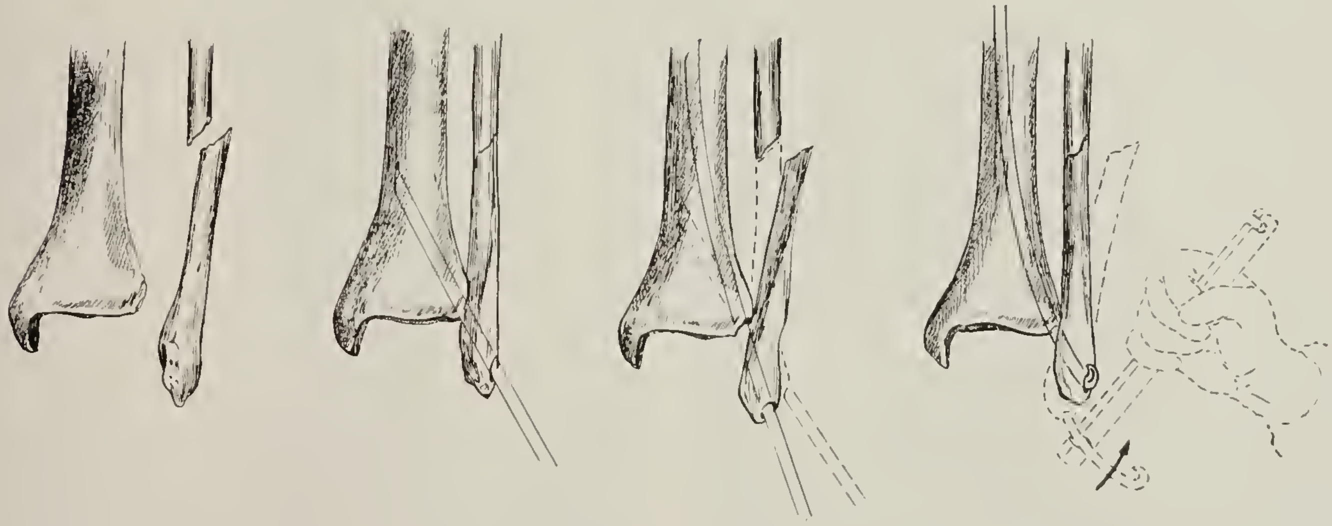
In transfixing a vertical fracture such as that of a tibial condyle, using a straight pin, the fragment is forced medially by the force of the pin to compress and close the fracture cleft. (A).

But if the proximal portion of the pin is given much of a curve, this compression force is lost and the fracture cleft remains open. (B).



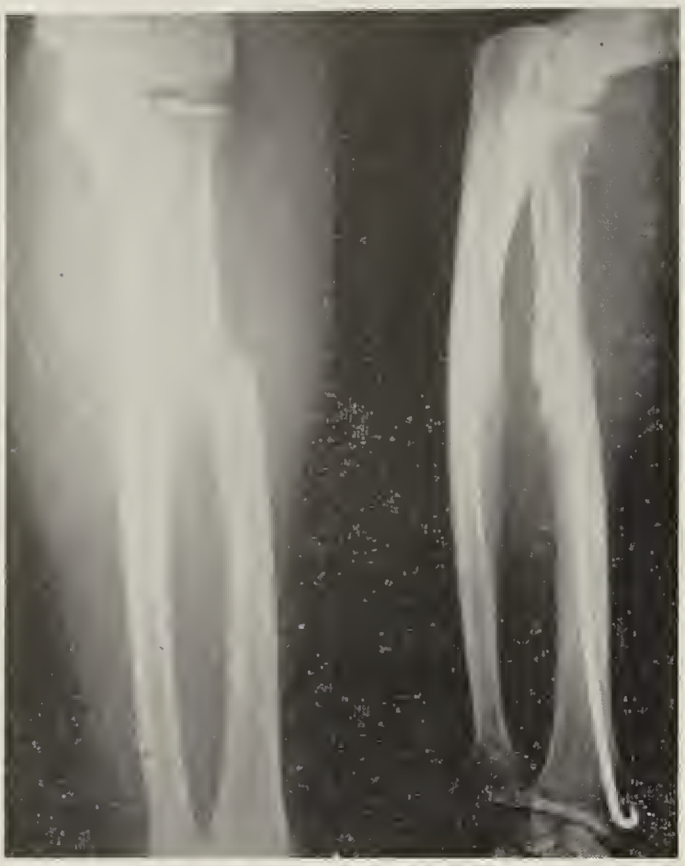
Curving Pin to Prevent Distraction

The see-saw action of a pin can rock or rotate a fragment to produce distraction. Example: internal malleolus tibia. A relatively long pin gives good fixation. It passes through the cancellous bone uneventfully, but when the point strikes and is deflected by the far cortex, the pin begins to rock on a fulcrum within the shaft of the bone. The head of the pin is forced medially in such fashion that the malleolus angulates and the fracture cleft opens widely. Curving the pin at the fracture level will allow the fragment to return to its proper position and close the cleft as the pin is driven completely home.



Tibio-Fibulal Diastasis

A straight pin passed obliquely through the tibio-fibulal joint might react similarly to the above to angulate a fractured fibula. The pin can be given a curve by the bending iron in such fashion that the deformity of the fibula will be corrected.



Radius, shaft. Healing at two months.

14

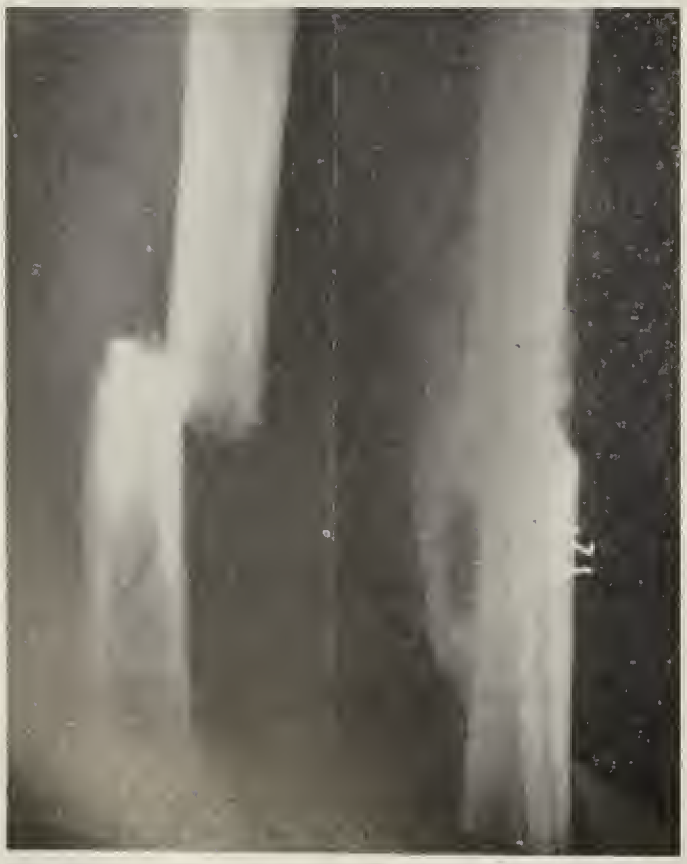
BONE HEALING

The three cases shown here are remarkable ones in which all the factors conducive to rapid bone healing were present. They were clinically healed in two months. The fractured femur case returned to his usual job as truck driver in two months.

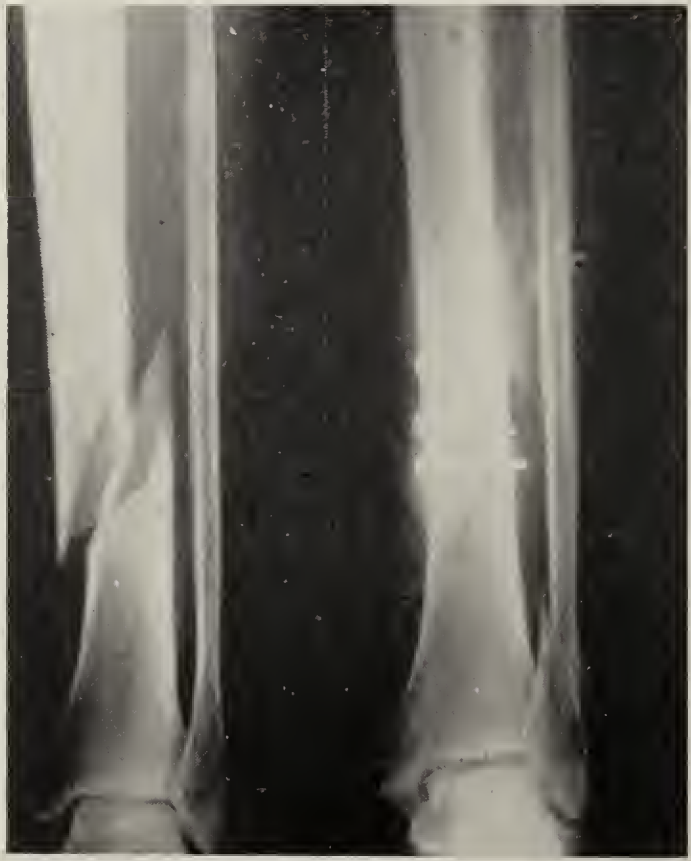
These cases demonstrate that in any given fracture the method of treatment chosen should be one best adapted to bring these factors into play. In the oblique tibia fracture this was best accomplished by screws. In the fractures of the femur and of the radius pinning was accomplished by semi-open operation.

All cases were permitted almost immediate function. Early return to function is extremely desirable. Weight bearing should be permitted gradually as healing permits.

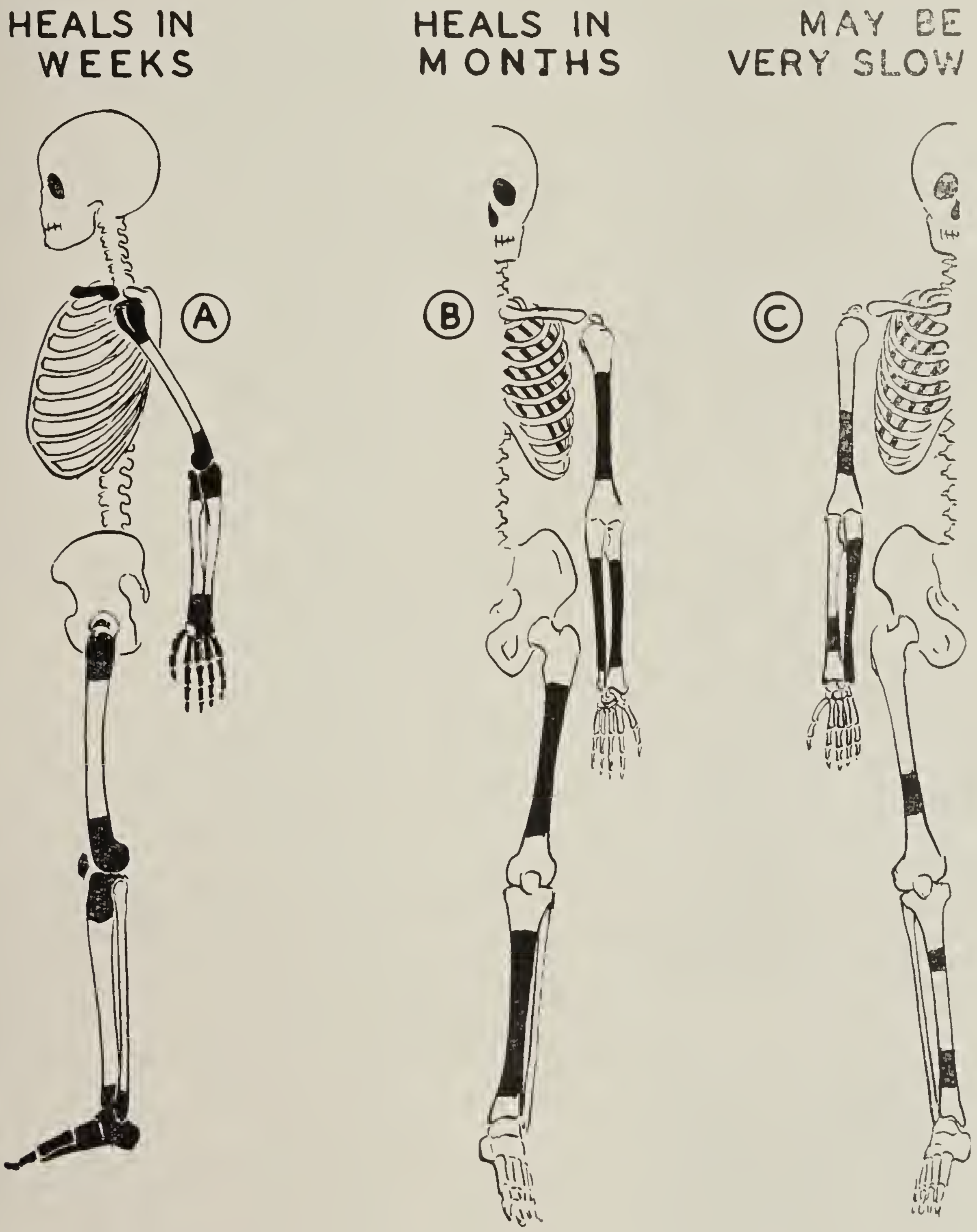
Above all let there be minimal tissue trauma, firm bone contact, and stable fixation.



Femur, shaft. Healing at two months.



Tibia, shaft. Healing at two months.



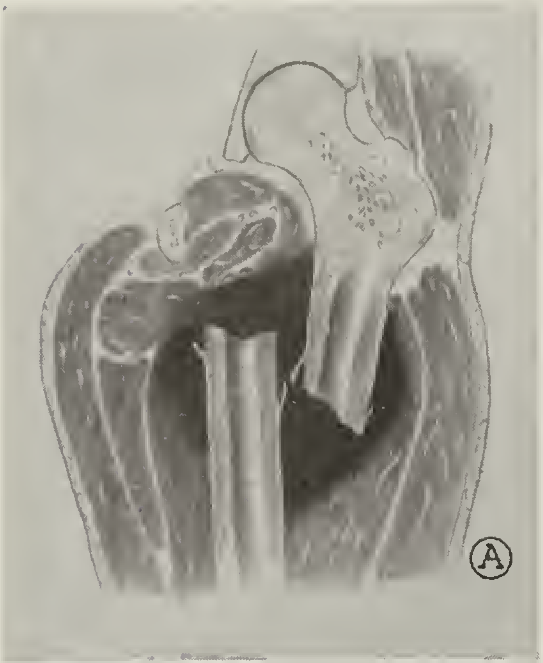
Influence of Anatomical Location

(A) Areas indicated in black are nearly all cancellous bone. The blood supply is excellent and healing is rapid, usually in weeks.

Notorious exceptions: subcapital fracture neck of femur, and carpal scaphoid.

(B) The hard compact bone of the shaft of long bones heals much more slowly and requires months of fixation.

(C) Shown in black are areas in which delayed or non-union is most prone to occur. Poor healing may be due to poor blood supply, distraction, or incomplete immobilization of the fragments.

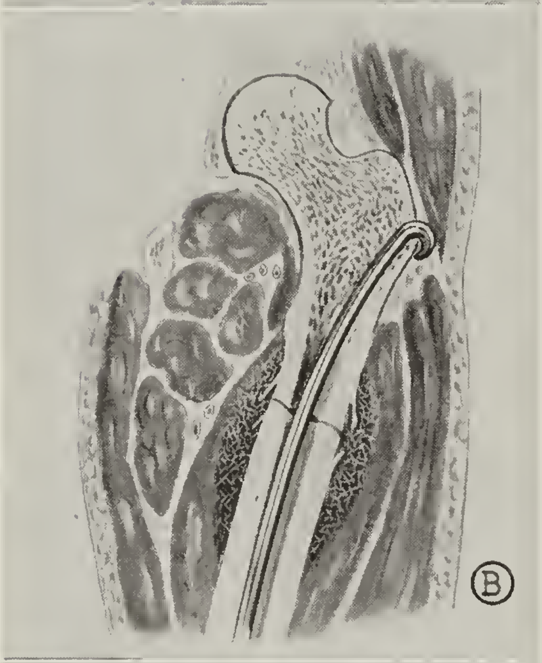


After a Bone Breaks, What?

(drawings diagrammatic) *

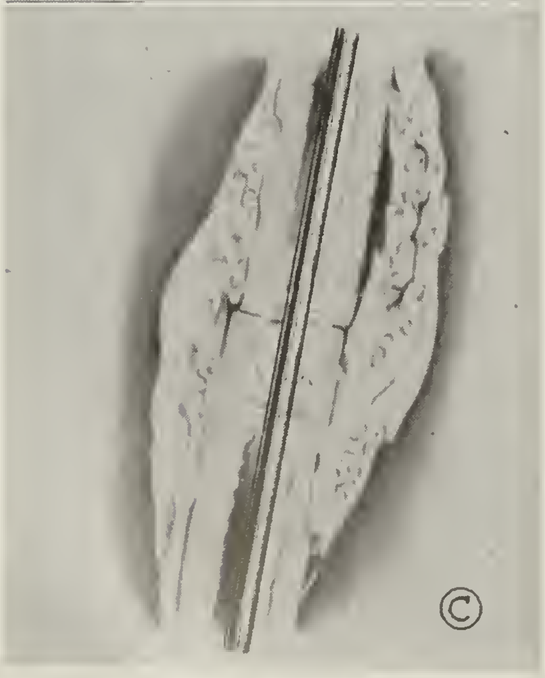
(A) FIRST FEW HOURS: Bone breaks, periosteum strips, soft tissue tears, clot forms, extremity shortens and swells.

SPLINT EARLY



(B) FIRST FEW DAYS: Fibrinous organization of clot occurs. Granulation tissue forms as in any healing laceration.

OPERATE EARLY



(C) FEW DAYS TO FEW WEEKS: Formation of primary callus by growth from periosteum and endosteum. Microscopic evidence of bone formation may be seen in first few days. Marrow cavity becomes closed at ends of the bone fragments. Regressive changes in bone ends occur.

New callus derives nourishment from surrounding soft tissue, periosteum, bone, and endosteum.

Be kind to tissue. Repair soft tissue damage early. Do as little trauma as possible to surrounding soft tissue, periosteum, bone, and endosteum.

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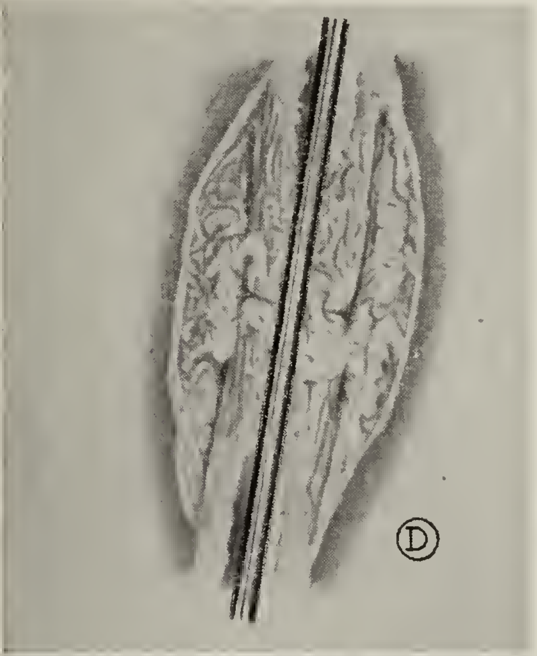
*Drawings reproduced in part from Rush, L. V., Rationale of Intramedullary Fixation of Fractures by the Longitudinal Pin, *Southern Medical Journal*, Vol. 43, No. 4, 291-300, Apr., 1950.

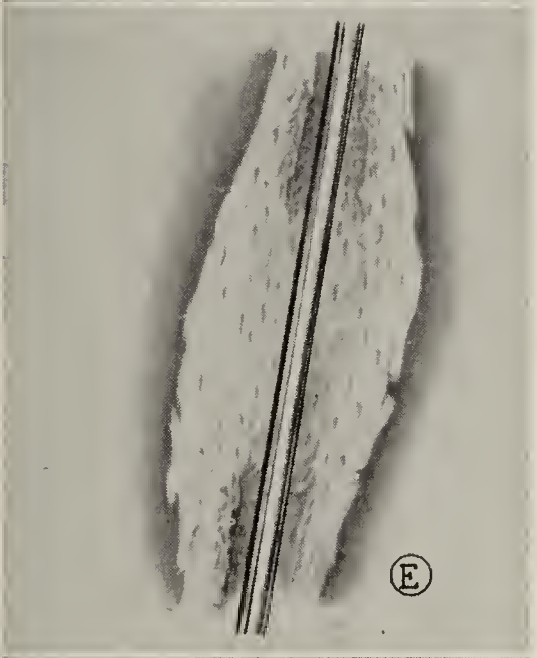


(D) AFTER SEVERAL WEEKS: Primary callus is regressing. Secondary callus is forming with bone union.

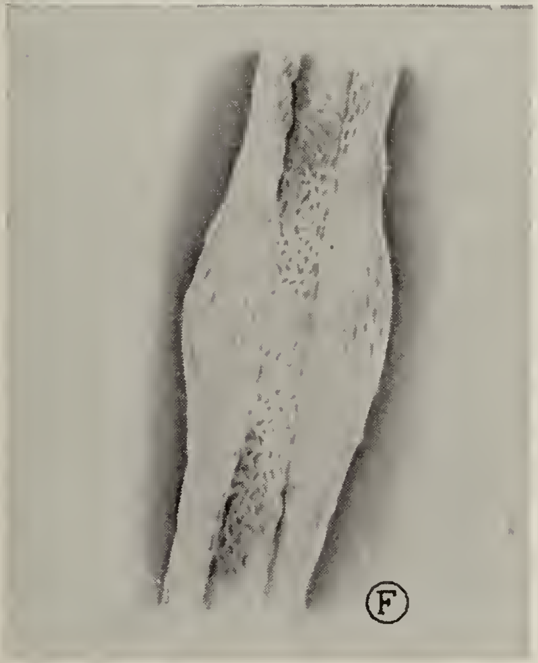
Islands of cartilage are being transformed to bone. Trabeculae of bone-forming elements are extending across fracture line to coalesce with their fellows from the opposite side.

Simultaneously some bone absorption is occurring at the fracture line and rarefaction or osteoporosis is evident in the bone ends.

Repeated motion at the fracture site can produce repeated minute fractures within the callus to prevent bridging of the cleft by new bone-forming elements and result in the deposition of a scar tissue barrier between the bone ends into which the new bone-forming elements may never appear.



(E) EVENTUALLY: The callus is replaced by new bone, largely cancellous in type, with coarse trabeculae.



(F) FINALLY: The medullary cavity reopens, the overgrowth of new bone gradually regresses and becomes more compact and the fracture site gradually assumes a structure approximating its original pattern.

PHYSICAL FACTORS

COMPRESSION OF BONE ENDS

Compression of bone ends is stimulus to osteogenesis. Optimum compression occurs from natural muscle pulls of the extremity. It follows that early return of muscular function stimulates healing if internal fixation is stable.

Because absorption of bone occurs at the fracture site during healing, bone must be free to telescope upon pin so that muscle pull will produce continuous bone compression.

Too much pressure can cause bone absorption. Therefore, early weight bearing is not always desirable.

The compression factor is most evident in the *thigh* because of the strong musculature. In the *upper arm* it may be almost completely absent below the deltoid insertion. Here the musculature is unbelievably weak.

In the *forearm* the muscle action is mostly upon the radius, but may be frustrated by the intact ulna. Similarly in the *leg*, the action upon the tibia might be defeated by the intact or rapidly regenerating fibula.

DISCOURAGING FACTORS

Conversely, anything which tends to pull or hold the bone apart can delay or prevent union.

(A and B) DISTRACTION: In the *forearm* non-union can occur in the radius or ulna because the bone ends can be held apart by the relatively greater length of its fellow.

In the *tibia* the bone ends are frequently held apart by the rapidly healing or intact fibula.

In medullary fixation distraction can occur from the following:

1. A large rod tightly impacted in the marrow canal.
2. A rod that is too long.
3. A rod which has a blunt distal end. A blunt rod by failing to penetrate the distal cancellous bone can force the fragment apart. This is to be especially guarded against in the shafts of the *ulna* and *humerus*.
4. Unusually weak musculature of an extremity (shaft of *humerus* and lower *ulna*).
5. Failure to exert counterpressure against the distal fragment, when indicated, as point is driven into fragment.

(C) ROTARY STRESS: With proper application of pins this is an infrequent problem, but can become disastrous. It is important mostly in those regions where healing is slow or delayed.

In delayed union of the *humerus*, periarticular adhesions can develop about the shoulder partially to fix this fragment so that rotary motion of the lower fragment will produce twist at the fracture cleft.

The *radius* can usually be so securely fixed that torque is no problem. In some fractures of the lower third, external splinting might be necessary to prevent twist.

In the distal ulna rotary stress is quite a problem. It can be remedied by driving a pin upward from a point of insertion in the side of the bone near the styloid end, or by external splinting.

Torque is not much problem in the *femur* when the patient is ambulatory, but it can be important in the bedridden patient because of the rotary action of the weight of the foot.

In the *tibia* external splinting is indicated in a majority of the cases.

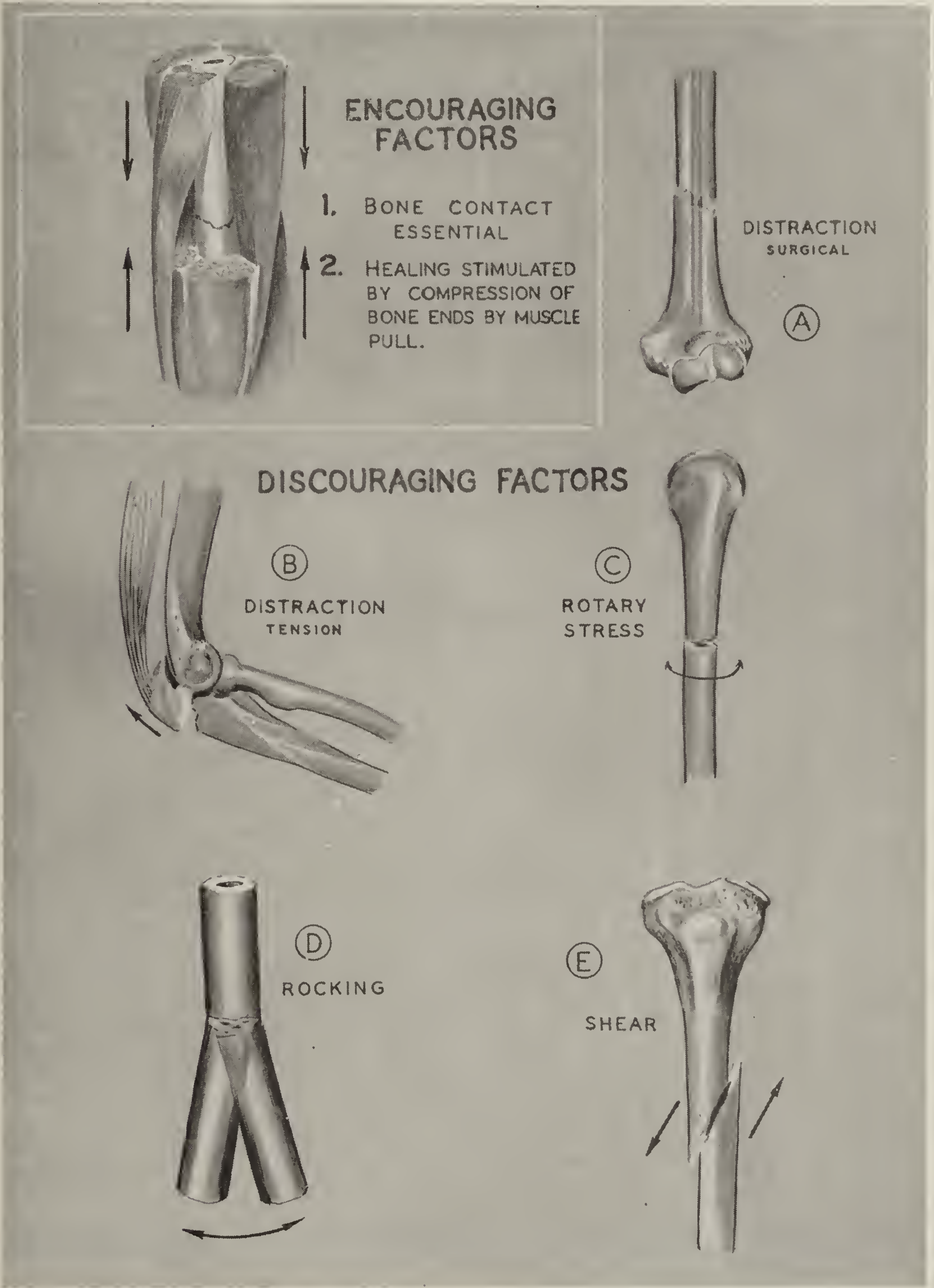
(D) ROCKING: At the fracture site this is to be expected if:

1. The pin is too small.
2. The pin is too short.
3. The bone is badly comminuted.
4. The pin does not secure a good purchase on both fragments.
5. *Weight bearing is begun too early.*

Excessive rocking at the fracture site not only delays healing, but excessive motion of the rod within the bone can cause local bone necrosis.

(E) SHEAR: Lateral stress is usually limited by the presence of the axial rod. In the *femur* it is of little importance because we are dealing with a single bone and even though the fracture be oblique, good contact results from muscle pull.

Certain oblique fractures near joints and of the shafts of the leg and forearm bones will displace to cause persistent distraction. Example: shaft of *tibia* and proximal *ulna*.


ENCOURAGING FACTORS
1. BONE CONTACT ESSENTIAL
2. HEALING STIMULATED BY COMPRESSION OF BONE ENDS BY MUSCLE PULL.
DISTRACTION
SURGICAL
Ⓐ
DISCOURAGING FACTORS
Ⓑ
DISTRACTION
TENSION
Ⓒ
ROTARY
STRESS
Ⓓ
ROCKING
Ⓔ
SHEAR

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

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R. L. Sanders, M.D. .... Memphis, Tenn.

State Associate Editors
John Archer, M.D. .... Greenville, Miss.
L. T. Carl, M.D. .... Greenville, Miss.

Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

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EDITORIALS

DR. WILLIAMS

The passing of Dr. Rice Williams of Houston takes from the medical profession and the citizenship of Mississippi an Abraham in faith, professional vision, and wisdom. He was a native of Pontotoc County, graduated in medicine from the University of Tennessee in 1894, and located in practice in Houlka, then moved to Houston where he has remained for 49 years. In his early years he was a general practitioner, but for the past several years he has confined his work to x-ray diagnosis and therapy.

Dr. Williams was a Christian citizen of exalted order, dedicated to man's finest achievements in health and abundant living. He was a man who was willing to meet any important issue and take his stand on the side that he believed to be right. He was able, kind, and diplomatic, but he stood steadfast when principle was at stake. Deeply devoted to his medical profession, he attended the meetings as but few men did in our state. He attended his last district meeting in Aberdeen and with a cordial hand, said, "I will see you at the December meeting in Tupelo." Organized medicine in Mississippi owes Dr. Williams a great homage. As speaker of the MSMA House of Delegates he was dean of parliamentary helmsmen. He loved justice and practised fair dealing. His advice was always sound and full of wisdom. His Bible faith gave him balance and poise as few men possess. It was a great joy and comfort to claim such a man as a personal friend. His memory will live on in our state.

We offer our deepest sympathy to his family, especially his excellent and devoted wife.

AWARD TO DR. UNDERWOOD

Dr. Felix J. Underwood was the recipient last month of the Lasker Award presented by the American Public Health Association at its New York meeting. This report fills our hearts with pride. Underwood's great organizing ability, his capacity for detail work, his patience, his courage, and his eternal persistency, have conspired to give Mississippi the best public health service to be found in this nation. The strength of a state is to be found very largely in the health of its people. Other states would be proud of the services of our executive health officer, who has turned down other offers to do this monumental service for the state he loves. However, the testing time of our appreciation is coming when our regular session of the legislature meets. We all want economy, but we must think straight and sound when it comes to crippling the health department which has been so efficient and which has served so well. Our health department has paid fine dividends. We should feel great pride in it and we should be grateful to him who has given more than thirty years of his life to make it what it is, We do believe that the medical profession, the members of the legislature, and the citizenship of our state have pride enough in the progress of public health in our state to oppose a cut in its services at this time.

NO LIQUOR ADS

A news item states that after the first of January the American Medical Association publications will not take any whiskey or tobacco ads. This seems to us a consistent and commendable policy.

The challenge to the medical profession is to build a citizenship adequate to meet any problem that may arise. There has not yet been enough bread produced in the world in any one year to feed the hungry mouths of the world. From the figures we have perused we feel sure that our nation is spending not less than 25 billion dollars per year for whiskey and tobacco. The consumption of whiskey as a beverage is incompatible with the machine age in which we live, and tobacco is not exempt in reckoning with lung cancer, peptic ulcer, and cardiovascular disease.

America is the brother of the world and the Jericho Road now encircles the earth. Service is the measure of greatness and the American doctor is challenged to sound leadership. We are not even able to pay the billions for these products in the raw, and after they are consumed reckoning their cost would be staggering.

The alcohol problem is one of our greatest in public health. It was said that prohibition caused kidnapping, but this evil persists. It was said that legalized whiskey prevents bootlegging, but we are convinced that this is not true. To the contrary, it enhances bootlegging and the making of moonshine liquor.

According to a recent article in the *Reader's Digest,* France has the greatest drinking problem of any nation. Even babies in France are given wine. France consumed six billion bottles of wine last year, of alcohol content, more than nine gallons per person. Maybe the Frenchmen does not get drunk, but he seems to have more liver trouble than the people of any other nation. One person out of 25 is victim of alcohol in France. Between three and four million people are licensed to make alcoholic drinks, one to every 90 people. Yet the tax collector takes only twelve per cent of the sales in France, while in the United States he takes 32 per cent. Furthermore, wine and liquor make up only six per cent of French exports.

It does seem that it is time for the medical profession to take the lead in reducing this enormous expenditure of money for whiskey and tobacco. To do otherwise seems to be poor judgment in the estimation of values. We commend the American Medical Association on a momentous decision. More power to it.

We note further in a recent issue of the *Commercial Appeal* that the White House has placed a ban on serving whiskey at functions of state. Congratulations to our President.

THE MID-SOUTH MEETING

The Mid-South Postgraduate Medical meeting is just around the corner—February 9, 10, 11, and 12 at the Peabody Hotel in Memphis. You will note a list of the program speakers in this issue of the journal, representing the various specialties with the best in the nation. The value of this assembly, now approved for formal credit by the Academy of General Practice, is proved over and again by its steady attendance and emulation in other places. One of the first such scientific assemblies of its type in the nation, it has sought to bring to the man in general practice and the specialist the best in medicine and surgery in capsule manner. This program is planned for a broadening influence for all. It is good that the practitioner and the specialist may sit in together for a common understanding of our medical and surgical problems.

The fellowship at the Mid-South has always been excellent. Those attending this assembly constitute a medical brotherhood endowed with a warmth and cordiality unexcelled by any other scientific organization.

Memphis has a fine medical atmosphere and now claims the largest medical school in the United States. This city, in the opinion of some, will soon challenge the title held by Houston, Texas—largest in the South.

Memphis doctors always extend a cordial hand. The Peabody is not surpassed for headquarters for an assembly of this type. Make your reservation now.

DR. JERE CROOK

Within recent weeks a number of outstanding men in the medical profession in the South have passed on, among whom none was more loved and appreciated than Dr. Jere Crook of Jackson, Tennessee. He was a man of vision, possessed a liberal education, and was practical enough to make his dreams come true. He was a past-president of the Mid-South Postgraduate Medical Assembly, the Southern Medical Association, and the American Railway Surgeons Association. He was an able orator and impromptu speaker. Dr.

Crook loved the practice of medicine and he loved people. He was a great citizen interested in every good cause for his town, state and nation. Organized medicine owes him much. He was liberal with his time when his services were needed by the profession. He kept well informed on political affairs as well as knowing the latest in every phase of medicine.

His interest and loyalty as a personal friend was ever an inspiration to us. He was courtly and courteous, kind and sympathetic. His spirit will ever live in medicine in the Mid-South and in the hearts of the people whom he served and loved.

It now seems that the University of Tennessee Medical School in Memphis is the largest in the United States. It also is measuring up in quality as well as size.

Plans are now taking form to build a two-million-dollar medical arts building just across the street from the Baptist Hospital in Jackson. This building will be a great asset to Jackson as a medical center. The construction of this building we think indicates wisdom. It will help to bring more and better medical service to the fine city of Jackson.

ENCOURAGE THEIR SALE

The Mississippi Tuberculosis Association is especially anxious this year during our Seal Sale Campaign to acquaint as many people as possible in Mississippi with facts about tuberculosis and the work of the tuberculosis association.

Tuberculosis is considered the number 1 public health problem in Mississippi. It kills more people between the ages of 15 and 34 than any other communicable disease. Since there are about 6,000 known cases and an estimated additional 6,000 unknown cases in Mississippi, we have a long way to go to bring this dreaded disease under control.

An adequate vitamin C intake may prevent many illnesses in the aged. Incidence of disabilities from heart and cerebrovascular disease may be appreciably reduced. Research has shown that vitamin C plays a vital role in cellular metabolism and in maintaining the integrity of cells.

Remember the dates of the Mid-South in Memphis: February 9, 10, 11, 12, 1954.

News and Comment

FELIX JOEL UNDERWOOD — LASKER AWARD WINNER

Mississippi-oriented health workers around the world rejoiced as the state's native-born health officer, Felix Joel Underwood, outstanding public health administrator, received the coveted Lasker Award.

Doctor Underwood was among five scientists and two organizations, distinguished for medical research and public health achievement, named as the 1953 winners of the annual Lasker Awards of the American Public Health Association.

Describing the prize-winning achievements, Dr. Frank G. Boudreau of the Milbank Memorial Fund, who served as Chairman of the Awards Committee, said: "Doctor Underwood has transformed his state in three decades into a national pacesetter in promoting public health. Working with the medical profession, health experts, political leaders, private foundations and private citizens, he has in one lifetime extended the range of public health far beyond the mere curbing of epidemics."

The Awards were made on November 12 at the 81st annual meeting of the American Public Health Association held in New York. In addition to a monetary prize of $1,000, Doctor Underwood received a leather-bound citation, hand-illuminated in Middle Ages style, decribing his accomplishments, and a gold statuette of the Winged Victory of Samothrace.

Since 1946, the awards have been made annually through the American Public Health Association by the Albert and Mary Lasker Foundation to acknowledge research or other contributions in the fight against those diseases which are the main cause of death and disability; and for distinguished service in the field of public health administration. Awards have previously gone to scientists and public health leaders and 13 medical groups.

Few governmental programs have had Mississippi's good fortune in regard to leadership—both capable and continuous.

HOSPITAL ASSOCIATION ELECTS

Mr. Preston L. Hill, adminstrator of the Martin Sanatorium of Picayune, was elevated to the presidency of the Mississippi Hospital Association at its annual meeting October 14-16. Sessions were held in the Buena Vista Hotel where more than 250 were registered. Dr. Omar Simmons, director of the Newton Hospital, Newton, is president-elect.

Mr. Dean Conley, executive director of the American College of Hospital Administrators, Chicago, luncheon speaker, emphasized a new approach to administration; while the banquet speaker, T. Hampton McGibony of Greensboro, Ga., keynoted the convention theme with his talk, "Conquest through Knowledge".

The business sessions produced a number of recommendations and changes, chief of which are:

To institute the house of delegates form of voting

To urge rededication of hospitals to the christian example of succoring the sick and injured

To approve the establishment of a joint program with the University of Mississippi for the promotion of internship dietetic training for students desirous of being dietitians in the smaller hospitals

To urge the increase of legislative appropriations for indigent care to $8.00 per day

To sponsor four instead of two institutes per year

To release a disaster plan to hospital administrators for use as model for emergency.

SOUTHEASTERN SURGICAL CONGRESS

The twenty-second annual assembly of the Southeastern Surgical Congress will be held March 8, 9, 10, and 11, 1954, in Birmingham, Ala. The Dinkler-Tutwiler Hotel will be headquarters.

ALABAMA CANCER SEMINAR

The American Cancer Society, Alabama Division, Mrs. Lillian G. Meade, executive director, will sponsor a two-day seminar, January 27 and 28, in Birmingham, Ala., to be held at the Tutwiler Hotel. The Alabama Medical Association, the Medical College of Alabama, the Jefferson County Dental Association and the Jefferson County Medical Society will cooperate.

The following outstanding speakers have been procured:

Dr. Frank Kanthack, Atlanta, Ga., who will talk on oral cancer; Dr. Michael Deddish, New York City, whose subject will be on the proctoscope in detection; Dr. Ross Golden, New York city, who will discuss gastro-intestinal neoplasms; Dr. John Wall, Houston, Texas, who will present detection of early carcinoma in the female genital tract; Dr. Wm. W. Scott, Baltimore, Md., who will consider prostatic cancer; Dr. F. E. Adair, New York, N. Y., who will talk on fibrocystic disease of the breast; Dr. John Schenken, Omaha, Nebraska, on neoplastic diseases of childhood; Dr. Richard H. Overholt, Brookline, Mass., who will present a paper on early detection of cancer of the lung; and Dr. Richard L. Sutton, Jr., Kansas City, Mo., on cancer of the skin.

Registration should be made at the Tutwiler Hotel, Birmingham. A fee of $5.00 will include the cost of the dinner, at which Prof. Wm. Boyd, Vancouver, Canada, will speak on "Some Thoughts on Carcinogenesis." Seminars open each day at 9:30 a. m.

ACS SECTIONAL MEETINGS

The medical profession at large is invited to attend any of six Sectional Meetings of the American College of Surgeons to be held between February 1 and May 19, 1954, in different parts of the country, Montreal, Quebec and London, England. There is no geographic restriction upon attendance, and those interested may select the session most convenient in time and place. Doubled attendance figures over the past three years have proved the high usefulness of these educational meetings.

Emphasis throughout is on disseminating information about new methods and therapies most useful to doctors practicing in smaller areas.

Panels, symposia, papers and medical motion pictures will be presented at each meeting. Surgeons of outstanding ability will act as teachers in leading discussions on problems encountered in day-to-day practice.

Feb. 1-3, Charlotte, N. C., Feb. 25-26, Reno, Nevada, March 1-4, Omaha, Nebraska, March 15-17, French Lick Springs, Indiana, March 31-April 2, Montreal, Quebec, and May 17-19, London, England.

WEST PALM BEACH INVITES YOU

The Southeastern District Meeting of the International College of Surgeons is to be held at West Palm Beach, Florida, in the Pennsylvania Hotel on January 29 and 30, 1954, and surgeons and any other interested doctors of Mississippi are invited to attend.

The Pennsylvania Hotel is ideally situated on the west bank of Lake Worth affording an excellent and unobstructed view of the shoreline of beautiful Palm Beach, the winter playground of the world. Attractive rates have been established by the hotel for this meeting at the height of the Palm Beach social season. All of the traditional seasonal activities will be in full swing and available to those in attendance. In addition to the attractive entertainment there will be a top-level program featuring top-level surgeons.

Reservations should be made early by writing the manager, Pennsylvania Hotel, West Palm Beach, Florida, or Dr. Lloyd J. Netto, Chairman, 416 Comeau Bldg. West Palm Beach, Florida.

DeSOTO COUNTY

The quarterly meetings of the DeSoto County Medical Society, presided over by President C. W. Emerson, M.D., and Secretary-Editor L. L. Minor, M.D., are steadily keeping pace with medical science and the seasons. At the last meeting Dr. John M. Wright was presented his certificate and pin alleging his admission to membership in the Fifty Year Club.

WHAT ABOUT POLIOMYELITIS?

(Continued from 236)

challenged with virus afterwards there seemed to be almost complete protection.

The National Foundation has recently announced that this vaccine will be given extensive field trials in second grade children in well selected areas all over the nation beginning in February, 1954. This will be the real test of effectiveness in producing immunity, dosage determination, time intervals of injections required, necessity of booster injection, and over-all preventive qualities of the vaccine. By the late fall of 1954 this study should tell us the possibility of real control by active immunization thereafter. It is planned to administer the vaccine to at least one-half million children and possibly nearer a million in the nation in February. Physicians should support in every possible way this essential study.

If the funds of the National Foundation had done nothing else than to make possible these few important discoveries, these funds will have been well spent. An effective safe vaccine alone will be worth more in the next few years than all the money collected through the Foundation in its entire history.

COURTESY CARD

CHARLES W. CACCAMISE, JR., M.D.
Diseases of the Skin
719 Carlisle Street
JACKSON, MISSISSIPPI

Deaths

DR. JERE L. CROOK

Many in Mississippi and throughout the Mid-South territory learned with deep regret of the death of Dr. Jere L. Crook, Jackson, Tennessee. He died at Vanderbilt Hospital, Nashville, October 31, of pneumonia complicated by a cardiac condition. He had been ill about two weeks. The funeral was held in Jackson.

Dr. Crook was one of the founders of the Southern Medical Association, being chairman of the committee that wrote the constitution and by-laws at the organization meeting in Chattanooga in November 1906. He was chairman of the Section on Surgery of the Southern Medical Association in 1919, presiding over the Section at Asheville meeting in November of that year, and was president in 1921, presiding over the Hot Springs meeting in November of that year. He has missed few meetings of the Southern Medical Association since its organization, being at Miami in November last year. He was ill at the time of the meeting in Atlanta the past month.

Dr. Crook was born at Henderson, Tennessee. March 10, 1874. He received his M. A. degree from Union University, Jackson 1892; his M. D. degree at Vanderbilt University School of Medicine 1894; and the degree of LL. D. was conferred upon him by his alma mater, Union University, in 1943. He entered practice in Jackson in 1895 with his father and has continued in active practice there until his death. He has for many years limited his work to surgery.

Dr. Crook is the author of a number of scientific articles which have appeared in medical publications. He has always been active in organized medicine, being president of the Madison County (Jackson) and Tennessee State Medical Associations, the Mid-South Postgraduate Medical Assembly, the American Association of Railway Surgeons, and others. He was the first physician from the South to be president of the American Association of Railway Surgeons. He has been a division Surgeon of the Illinois Central Railroad for more than fifty years.

Dr. Crook was one of the organizers or an official of the Jackson Y.M.C.A, the Jackson Lodge of Elks, the Knights of Pythias, the Madison County Historical Society, the Jackson Rotary Club, the West Tennessee Executives Club, the Chamber of Commerce, the Jackson Golf and Country Club. He worked untiringly in support of Union University, Lambuth and Lane colleges, located in Jackson.

He was truly a man of vision "who had the ability to put his dreams into material force—into brick. stone and mortar, into hospitals, into youth-serving institutions, into universities and colleges, into books of history, into human lives and characters".

Dr. Crook is survived by his widow, who resides at 1210 Highland Avenue, Jackson; four sons, Senter Crook, Nashville; Jere L. Crook, Jr., Memphis; Dr. William G. Crook, Jackson, practicing pediatrics; and Dr. Angus M. Crook, Henry Ford Hospital, Detroit; and two daughters, Mrs. Joseph Thompson, Nashville; and Miss Nancy Green Crook, Jackson.

DR. J. RICE WILLIAMS

Joshua Rice Williams, Mississippi Masonic leader, died at Houston Hospital Thursday night, November 26. He was 86.

Services were held at the Houston Presbyterian Church with officers of the Grand Lodge of Mississippi in charge. Burial was in Houston Cemetery.

Dr. Williams was born at Redland in Pontotoc County on Aug. 3, 1867, the son of Oliver C. and Regina Ann Williams. His grandfather, Thomas H. Williams, was at one time United States senator from Mississippi.

He was educated in the public schools of Pontotoc County and at Houlka, just north of Houston. He was graduated from the University of Tennessee with an M.D. degree in 1894, was president of his class his senior year and was a member of the judiciary committee of the Paul of Eve Medical Society.

Dr. Williams did postgraduate work at the University of Nashville, doing special study in radiography and deep therapy in Memphis, St. Louis, Chicago, New Orleans, Battle Creek, and Mayos.

In 1894 he began the practice of medicine at Houlka. He practiced at Van Vleet, Miss., from 1898 until Jan. 20, 1904, and at Houston from 1904 until the present. Since 1923 he had confined his practice to hospital work at the Houston Hospital, doing radiography and deep therapy exclusively.

He was a radiological consultant for nine counties in north Mississippi for the Selective Service during World War II, Chickasaw County health officer for many years, member of the first State Hospital Commission, member of the board of trustees of the Mississippi State Hospital at Whitfield during the Whitfield administration, a past president of the Chickasaw County Medical Society and of the North Mississippi Medical Society.

He served on law committees of the State Hospital Association and the Mississippi State Medical Society, and was speaker of the House of Delegates of the Mississippi State Medical Society from 1938 until 1946.

For many years, Dr. Williams was president of the board of trustees of the Houston Public Schools, a member of the Chamber of Commerce, a past-president of the Houston Exchange Club, chairman of the commission that built the first hard-surfaced roads in and around Houston, installed the first telephone system in Houston, later selling it to the Cumberland Telephone Co.

He was recognized as one of Mississippi's foremost leaders in the Presbyterian Church, serving as Bible class teacher and Sunday School superintendent.

Dr. Williams was a presiding officer of all of the local Masonic bodies. He was a member of Hamasa Shrine Temple, Meridian; he was past grand master of the Grand Lodge of Mississippi, F&AM.

He leaves his wife, Mrs. Florence Williams; a son, Felix Williams of Memphis, and a daughter, Mrs. Powell Goodwin of Philadelphia, Miss.

THE CRAWFORDS OF TYLERTOWN

We present a distinguished Mississippi family in medicine, the Crawfords of Tylertown. The father, Dr. B. Lampton Crawford, is associated with his three sons in the practice of medicine in the Walthall Hospital, which the father founded. They are: Dr. Everett Crawford, Dr. Walter Crawford, and Dr. Ben Crawford, the last only recently returned from military service.

As private and church-supported schools have played a great part in building the American system; so in the march of medicine the private and church-owned hospital has played an unmistakable role. But with the enormity and complexity of medical service, many private hospitals have yielded to the publicly-owned institution, especially in Mississippi. However, the knowledge, the wisdom, the vision of service and the economical astuteness of many of the doctors who still own private hospitals could be utilized in the administration of the public institution with untold effectiveness. Medical service at its best has been practiced in some of our private hospitals.

An institution that we believe has stood consistently near the top of this exemplary group is the Walthall Hospital at Tylertown, owned and operated by Dr. Lampton Crawford and his sons. Financially, much has been invested that this institution might serve well, but greater invest-

Dr. Ben Crawford.

ments have been made in individual responsibility to the community to give the best possible medical care to every patient.

Dr. Crawford, well-educated and balanced in judgment, is himself a great citizen-doctor, finely dividing health assets—physical, mental and spiritual. He has walked and advised with his people, coveted for them the best in medicine, carried it even to the one-room cabin, and banked all the risks in operating the hospital on faith. His institution has been a going establishment for fifty years, not only going, but growing. First, the eldest son returned to practice with his father; now three of them are on the staff.

The B. L. Crawford family have discovered diamonds in their own home town. For fifty years Dr. Lampton Crawford has served well in building a better citizenship for his town and county. Not only this, he has planted vision for service in three able sons, and it is quite certain that they will continue the work so laudably begun by the father.

A celebration was held for Doctor Crawford on June 14, 1953, in his home town. With one accord the people called him blessed. One family came with thirteen children to pool their felicities and praise. It was a great day and the people made sure that the life and the work of Doctor Crawford was duly recognized. On this occasion Dr. W. H. Frizell delivered to him the fifty-year certificate of service and the gold lapel pin from the Mississippi State Medical Association. Dr. Frizell is president of the Fifty-Year Club and has been since its organization. His eloquent oration on the life and the work of his beloved friend crowned the day with a fitting aura of benediction.

Dr. Crawford married the former Miss Myrtis Lea. Their four children are Mrs. Clyde Lott, Dr. Everett Crawford, Dr. Walter Crawford, and Dr. Ben Crawford, all of Tylertown.

MEDICAL SOCIETY CALENDAR

SOCIETY	*MEETS*
Central Medical Society	First Tuesday each month. Roof Robt. E. Lee Hotel, 6:30 P. M.
DeSoto County	Winter, spring, summer, and fall.
South Miss. Medical Society	Second Thursday each month. Alternating, Hattiesburg and Laurel.
Tate County Medical Society	No regular meetings.
Northeast Miss. Medical Society	Second Tuesday of March, June, Sept., Dec.
Clarksdale and Six Counties	Fourth Wed. of March; Second Wed. of November., Clarksdale, Mississippi.
Coast Counties Medical Society	First Wed. each month. Alternating all over Coast.
North Miss. Medical Society	First Thurs. of January, April, July, and Oct. University unless otherwise specified.
Amite County Medical Society	First Thursday each quarter, Field Memorial Community Hospital, Centreville.
East Miss. Medical Society	Third Thurs. of March, June, Sept., and Dec. Meridian, Miss.
Tri-County Medical Society	Second Tuesday of March, June, Sept. and Dec. Brookhaven, McComb, Hazlehurst, Brookhaven (1952).
Delta Medical Society	Second Wed. of April and Oct Cleveland, Miss., Oct. 1952. (Rotates in the 5 counties).
Wilkinson County	Second Thursday of March, June Sept., and Dec., Field Hospital Centreville.
Sharkey-Warren Issaquena -	Second Tuesday each month. Olde Southern Tearoom, Vicksburg.

ANNOUNCEMENTS

The practice of Ford S. Williams, M. D. is being continued by Charles W. Caccamise, Jr., M. D., 719 Carlisle Street, opposite Baptist Hospital, Jackson, Mississippi.

Practice limited to diseases of the skin. By appointment. Telephone 5-2901.

The Vicksburg Clinic announces the association of Dr. J. A. Wimberly for general practice, 1600 Monroe Street, Vicksburg, Mississippi.

Eustace H. Winn, Jr., M.D., announces the opening of offices for the practice of general surgery, 336 Fairview Avenue, Greenville, Mississippi.

Fifty Year Club Biographica

WILLIAM LESLIE LEAKE

DR. LEAKE

William Leslie Leake, whose father was a physician, Dr. E. K. Leake, was born October 17, 1880 at Collierville, Tennessee.

After attending high school in Collierville, he was graduated from Milligan College, Johnson City, Tennessee. In 1903, he received his medical degree from Memphis Hospital Medical College, (now the University of Tennessee.)

Doctor Leake was honored by the University of Tennessee this year—fifty years following graduation.

On October 18, 1953, the State Medical Association honored Doctor Leake with lifetime membership in the Fifty Year Club of the Association.

For many, many years, Doctor Leake has served his fellowman faithfully and well and brought honor to himself and to the profession. At the present time, Doctor Leake continues his practice at Maud where he has been since 1931.

JOHN MARION WRIGHT, M. D.

DR. WRIGHT

John M. Wright was born Nov.7, 1882 at R. F. D. Booneville, Miss., son of the late Benjamin F. and Martha McCleary. He secured his education in the elementary and high school of his vicinity; received a degree from the Oakland Normal Institute. His medical degree was from the University of Louisville, Kentucky. Recently he received an Alumnus Certificate of Merit. In 1912 he took a clinical course in microscopy at Tulane in New Orleans. He uses his microscope daily in his work.

Dr. Wright was chief medical examiner for DeSoto County during World War I; and examiner and adviser for the local draft board during World War II. He was licensed to practice medicine in Mississippi in 1903, first locating in Prentiss County. In 1905, he moved to DeSoto County where he still resides. He is a member of the Christian Church and a charter member of the Hernando Rotary Club where he is a regular attendant and practices sincerely the slogan "Service Above Self—He Profits Most Who Serves Best."

One of the finest deeds that the good doctor ever accomplished was when he persuaded the lovely Miss Sarah Buntin to be his wife. They are the parents of two children, John, Jr., and Elizabeth Ann. Dr. Wright has received his Certificate and pin as a member of the 50 Year Club of the Mississippi State Medical Association; it was presented to him at the October 7 meeting of the Hernando Rotary Club. Dr. Wright is still a student, and an exceptionally good general practitioner, well-posted in the affairs of the day. He is diligent in business, fervent in spirit serving his Lord; this Biblical injunction has been heeded by this disciple of Hippocrates through the years.

JOHN WILLIAM DUNCAN DICKS

DR. DICKS

John William Duncan Dicks, son of John Allen and Eliza McArn Dicks, was born January 19, 1874 in Jefferson County, Mississippi.

After receiving his early education in the private schools in Natchez and Jefferson Military Academy, he took his premedical at Southwestern, Brooklyn Polytechnic Institute and Leland Stanford University, and was graduated from the Medical Department of Tulane University, New Orleans, in 1899.

Immediately following graduation, he began practicing medicine in Jefferson County. Later, in 1903, he moved to Natchez where he continued to practice until he retired.

He served in the Medical Corps of the Army (1916-1919) and was commissioned lieutenant colonel and was twice cited for distinguished service. In 1907, he became superintendent, and surgeon-in-charge and later president of the board of trustees of the Natchez Charity Hospital. Also, he served on the surgical staff of the Natchez Sanatorium as well as the Charity Hospital.

Doctor Dicks is an honorary life member of the Homochitto Valley Medical Society. He became a member of the Southern Medical Association when it was first organized. He is a Fellow of the American College of Surgeons and has been a Fellow of the Southeastern Surgical Congress since it was organized. He is an honorary life member of the American Association of Railway Surgeons and is a retired AA surgeon of the United States Public Health Service. He served on the Council of the Mississippi State Medical Association from 1928 until 1932 when he was elected president-elect, serving as president the year following. His biography appears in "Who Is Important in Medicine in the United States."

In Natchez, Doctor Dicks has been a member of the American Legion since its organization. He, also, is a member of the Veterans of Foreign Wars, Sigma Alpha Epsilon, a Mason (50 years) and a member of the Elks.

In 1949, he was awarded a fifty year certificate and gold 50-year pin by Tulane University to commemorate his graduation from Tulane Medical Department, 1899.

On July 10, 1953, the State Medical Association honored Doctor Dicks with lifetime membership in the Fifty Year Club. Many honors have been bestowed upon this physician but perhaps none is more sincerely appreciated than the gratitude expressed by his fellowman.

Since retiring, Doctor Dicks, still greatly interested in Mississippi medicine, lives in Swarthmore, Pennsylvania, 314 Lafayette Avenue.

JAMES RUFUS HILL

DR. HILL

James Rufus Hill, son of Lawson Alexander and Barbara Whisenant Hill, was born at Molino (Union County), Mississippi, on August 10, 1872. His father served as a surgeon in the Confederate Army.

He was educated in the public schools of Alcorn County, private school at Kossuth and the Iuka Normal Institute. For three years, he taught in the schools of Mississippi.

He received his medical education at Memphis Hospital Medical College and following graduation in 1903, located at Kossuth where he practiced until he moved to Corinth in 1923. A son, Stanley Allison Hill, has been associated with his father in the practice of medicine in Corinth since 1933.

Doctor Hill served three times as president of the Alcorn County Medical Society, president of the Northeast Mississippi Thirteen Counties Medical Society and of the State Medical Association. A former chief of staff of the Corinth Hospital, he is on the staffs of the Community and Corinth hospitals.

For many years, Doctor Hill has been a ruling elder in the Presbyterian Church. In community improvement projects he has shown leadership, assisting in the establishment of the Alcorn County Agricultural High School at Kossuth and later served on the board of trustees for a number of years.

Twice, Doctor Hill served in the Mississippi legislature as a member of the house of representatives. He is a Mason. Active in civic life, he served as president of the Kiwanis Club in 1933.

On July 9, 1953, the State Medical Association honored Doctor Hill with lifetime membership in the Fifty-Year Club.

Manifold deeds of service and kindness have won for Doctor Hill a host of friends enhancing the joy of living and evidencing the greatness of his contribution to mankind.

"Academic amateurs" who never leave the protection of the ivory tower represent a threat to psychiatric research, writes Dr. Lawrence S. Kubie in the October issue of the Journal of Medical Education. He calls for development of a new leadership to help the progress of psychiatric research. He recommends that 25 selected men complete their academic training, then go out into private office practice for a number of years, possibly until their mid-40's. At the end of that time they would be invited back again to the academic center with 10-year appointments for full-time research.

"Men who have already fought their way through to maturity on so many fronts (personal, technical and clinical) can safely utilize modest ease and security while they carry on their own investigations."

NEW Drugs NEW Devices NEW Digests

ABSTRACT FROM PEDIATRIC LITERATURE

Harvey F. Garrison, M.D.

Present status of penicillin prophylaxis of rheumatic fever. Benedict F. Maswell, Boston, Mass. Modern Concepts of Cardiovascular Disease (American Heart Assn.) 20:108-109, September 1951.

The problem of rheumatic fever prevention can be divided into two phases: the first is concerned with the prevention of initial attacks; the second involves the prevention of recurrences. Practically all initial and recurrent attacks are precipitated by antecedent hemolytic streptococcal respiratory infections. One can, therefore, approach the problem of rheumatic fever prevention through an attack on the hemolytic streptococcus.

Observations on the effect of oral penicillin on the throat flora of persons found to be carriers of hemolytic streptococci have indicated that hemolytic streptococci can be cleared completely from the throat by oral administration of penicillin in about three-fourths of the individuals. In those in whom the streptococci are not permanently eradicated, the organisms are greatly suppressed, in that cultures fail to reveal their presence during the period that penicillin is being administered.

At the House of the Good Samaritan, among patients recovered from previous rheumatic fever who have been carried on a regimen of daily oral penicillin, no instance of hemolytic streptococcal respiratory infection or of rheumatic fever recurrence has been encountered.

On the basis of carrier studies it would appear that 100,000 to 200, 000 units of oral penicillin three times daily is an effective schedule. The first dose is given when the patient wakens and the last dose at bedtime. Since food interferes with the absorption of oral penicillin, each dose should be given at least one-half to one hour before meals and at least two hours or three hours or more after meals. The prophylactic penicillin regimen, at present prices, costs about $100 per year.

The only important risk with daily oral penicillin is the possible development of a hypersensitivity (allergic) reaction. Such reactions are infrequent and rarely serious. They may include fever and joint pains and hence may cause a mistaken diagnosis of a rheumatic fever recurrence, but are almost always accompanied by marked urticaria which is rarely a manifestation of rheumatic fever. If a penicillin reaction does not occur within the first two weeks after beginning the prophylactic regimen, it is not likely to occur subsequently, especially if the penicillin is taken without interruption.

The development in vivo of penicillin-resistant group A hemolytic streptococci has not been reported. If the patient is a child, the prophylactic regimen probably should be continued until the end of schooling, that period in life when exposure to the hemolytic streptococcus is likely to be the greatest. In adults the regimen probably should be continued for at least five years from the last attack of rheumatic fever. For the child who does not have rheumatic heart disease, but who comes from a rheumatic family, continuous daily oral penicillin is indicated for limited periods when there is known exposure to hemolytic streptococcal infection.

Among 34 rheumatic subjects with hemolytic streptococcal respiratory infections treated with large doses of penicillin for 10 days, rheumatic fever recurred in only 2 instances (6 per cent). Among 12 comparable rheumatic subjects, similar streptococcal infections not treated with penicillin were followed by rheumatic fever recurrence in 6 instances, which is the average recurrence rate following hemolytic streptococcal infections.

COMMENT:

The above article is quite up to date in its suggested treatments and prevention of rheumatic fever. I would not at this time make any suggestions other than the ones indicated in the article.

NEW PRODUCT: Pen-G-Caps, a yellow, easy-to-swallow, rod-shaped, soft gelatin capsules containing 200,000 units of procaine penicillin G suspension in oil, with 2 per cent w/v aluminum monostearate as the dispersing agent. The capsules are stable at room temperature and require no refrigeration.

Indications: Pen-G-Caps are indicated in the treatment of infections caused by penicillin-susceptible organisms, including streptococcic, staphylococcic and pneumococcic infection, Vincent's stomatitis and gonorrhea.

Administration and Dosage: One or two Pen-G-Caps orally every eight hours depending upon the severity of the infections.

HOW SUPPLIED:	LIST
Bottles of 12 capsules	$1.55
Bottles of 100 capsules	$12.00
Bottles of 500 capsules	$57.06

WHO MAKES IT: The Upjohn Company.

NEW PRODUCT: Quelicin chloride (succinylcholine chloride, Abbott)

DESCRIPTION: Short-acting muscle relaxant of low toxicity for general surgical procedures. QUELICIN is especially recommended to facilitate endotracheal intubation, endoscopic examination and orthopedic manipulation. Quelicin Chloride also is recommended at the end of surgical procedures where added relaxation is desired for closure of the abdomen. Although requiring refrigeration, solution will not decrease in potency if kept at room temperature 24 to 48 hours.

DOSAGE: For short procedures: single intravenous doses in the range of 10 to 30 mg. usually suffice, depending on the patient; effect of the drug usually disappears within five minutes. For long procedures: intravenous drip technique is preferable and employs either a 0.1% or a 0.2% solution of quelicin in isotonic saline solution or in dextrose 5% in water. Average dose for adults is 2 to 3 mg. per minute.

PRECAUTIONS: Quelicin Chloride should be used only by skilled anesthesiologists who have at hand facilities for controlled respiration and administration of oxygen, if needed. Since quelicin's duration of action is brief, the surest antidotes are oxygen and maintenance of ventilation and circulation.

CONTRAINDICATIONS: Contraindicated in patients with severe liver disease, severe anemia, severe malnutrition and insecticide poisoning.

HOW SUPPLIED: In 10-cc. multiple-dose vials containing 20 mg. per cubic centimeter; and in 10-cc. ampoules containing 50 mg. per cubic centimeter. (For dilution only).

NEW PRODUCT: Blutene Chloride (tolonium chloride, Abbott)

DESCRIPTION: Orally administered nonhormonal agent, antiheparin in effect, for treatment and prevention of functional uterine bleeding (menometrorrhagia). Blutene's chemical structure is totally unrelated to estrogens.

DOSAGE: Dosage for treatment of menometrorrhagia: two to three tablets per day (taken at meals) at the time of bleeding. For prevention of excessive bleeding: the same dose for five or six days preceding estimated time of menses.

CAUTIONS: Blutene should be used only after adequate gynecologic examination has ruled out organic disease as the cause of bleeding.

HOW SUPPLIED: In small, easy-to-take sugar-coated tablets, 100-mg. bottles of 25 and 100.

NEW PRODUCT: Paladac is a new liquid vitamin preparation of 9 vitamins including A,D,C,B-complex factors and B_{12}. It has an even-flowing consistency with the color and aroma of orange juice and a palatable orange flavor.

WHAT IT'S FOR: The prevention and treatment of vitamin deficiencies.

HOW SUPPLIED: In both four-ounce and pint bottles. A 4 cc. teaspoonful exceeds the established minimum daily vitamin requirements for infants. children and adults.

WHO SUPPLIES IT: Parke, Davis & Company, Detroit, Michigan.

NEW PRODUCT: Cortef is a brand of hydrocortisone (17 - hydroxycorticosterone-compound F) synthesized in the research laboratories of the Upjohn Company. Each white, scored, compressed tablet contains:

Hydrocortisone .... 10 mg.

ACTIONS AND USES: The over-all therapeutic and hormonal effects of hydrocortisone administered orally are similar to cortisone acetate. Clinical evidence has established that smaller amounts of hydrocortisone will be needed to effect equivalent improvements in patients with rheumatoid arthritis, the dosage ratio being about 70 mg. of cortef to 100 mg. of cortisone. Cortef is used in rheumatoid arthritis to relieve inflammation and restore joint function.

ADMINISTRATION AND DOSAGE: Cortef is administered orally, the daily dosage being given in 3 or 4 divided doses. As with cortisone, this will vary with the individual patient and severity of condition. For both initial suppression and maintenance therapy the dose is 70% of the cortisone dosage. Precautions and contraindications are the same as for cortisone.

HOW SUPPLIED:	List
Bottles of 25 tablets	$3.20

WHO SUPPLIES IT: The Upjohn Company.

Excellent Results in Diaper Rash, External Ulcers, Wounds, Eczema, Burns.

NEW PRODUCT: Desitin, Ointment, Lotion, In Difficult Skin Conditions.

New studies in patients of all ages extending over three years find that Desitin Ointment, the pioneer external cod liver oil therapy, and Desitin Lotion are "good topical applications for the treatment of a variety of skin disorders and wounds." Drs. H. G. Grayzel, C. B. Heimer, and R. W. Grayzel, writing in New York State Journal of Medicine, Oct. 1, 1953, attribute part of the therapeutic action of these Desitin cod liver oil preparations to the influence of their vitamins A and D in skin nutrition and metabolism.

Of 215 infants and children with extensive contact dermatitis. diaper rash, papular and vesicular lesions, severe intertrigo, chafing, irritation, etc., "significant amelioration" or practically normal skin was achieved in over 96 per cent of the patients upon application of Desitin Ointment. "In 164 cases (76 per cent) the response was good; in 44 patients (21 per cent) it was only fair." Only 7 did not respond. "No result was considered good or fair, which did not give immediate favorable response within twenty four hours." For a reprint of the complete paper write to Desitin Chemical Co., 70 Ship Street, Providence 2, R. I.

WHAT THE PRODUCT IS: Amphedase Kapseals, A combination of vitamin components-nicotinamide, thiamine hydrochloride and ascorbic acid-and dextro-amphetamine sulfate and Taka-Diastase.

WHAT IT'S FOR: The management of asthenia, convalescence, depression, obesity, faulty nutrition, chronic alcoholism and geriatrics.

HOW SUPPLIED: In bottles of 100 and 500 for prescription dispensing only.

WHO SUPPLIES IT: Parke, Davis and Company, Detroit, Michigan.

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COAST COUNTIES MEDICAL SOCIETY MEETS AT BILOXI

The Coast Counties Medical Society met November 4, at the Buena Vista Hotel. For the scientific program, Dr. Osler Abbott and Dr. Bruce Logue of Emory University Medical School, Atlanta, Ga., discussed "Some Phases of Cardiac Surgery."

The auxiliary of the society welcomed the president of the State Medical Auxiliary, Mrs. Lamar Bailey of Kosciusko. Mrs. Eldon Bolton, president of the Biloxi Unit, introduced Mrs. Bailey, who in her address to the auxiliary, stressed the projects of the organization, including Mental Health Hygiene, Civil Defence, Future Nurses Clubs, and Nurse Recruitment. She reported briefly on the AMA convention in New York.

Mrs. Bailey urged auxiliary members to practice the attributes of appreciation, responsibility, ambition and friendliness in their home and social life, church and club work, and civic and community life.

Following adjournment of the meeting there was a fellowship hour and banquet. Dr. Eldon Bolton, president of the Coast Counties Medical Society, was toastmaster. He introduced Mrs. Lamar Bailey, Dr. Osler Abbott, Dr. Bruce Logue and the president of the Gulf Coast Clinical Society, Dr. E. L. McCafferty, and Mrs. McCafferty of Mobile.

TH TIPS

Mrs. Harry M. Gilkey, *Today's Health* chairman for the Central Region, has sent this message to the state chairmen in her area:

10 WAYS TO PUT YOUR AUXILIARY OVER THE TOP 100 PER CENT QUOTA

1. Take time to read this month's issue of *Today's Health.*
2. Carry this month's issue of *Today's Health* everywhere you go.
3. Ask everyone if they have seen this issue.
4. Plan your campaign for each month with your committee.
5. Work with the Public Relations Committee of your Medical Society.
6. Get publicity in your County and State Medical Society Bulletin.
7. Call on all physicians and dentists who do not have *Today's Health* in their offices.
8. See that your own beauty shop and your husband's barber shop have a subscription to *Today's Health.*
9. Have an exhibit of the magazine at all conventions and fairs.
10. Use other organizations to increase your sales force.

"If you will faithfully follow these suggestions, I will guarantee that you will go over 100 per cent of your quota."

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Gastroenterology
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Obstetrics
A. D. Ruedemann, M.D., Detroit, Mich.
Ophthalmology
Oscar L. Miller, M.D., Charlotte, N. C.
Orthopedic Surgery
Francis L. Lederer, M.D., Chicago, Ill.
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Pathology
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Radiology
Brian Blades, M.D., Washington, D. C.
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Ocular Allergy*

ALBERT D. RUEDEMANN
Detroit, Mich.

The ocular manifestations of allergy may involve any portion of the eyeball or orbit, although some parts may not be as severely or frequently involved as others. As more complete studies of patients are made, more cases of allergy are found to occur in the group of ocular disease, and patients find relief following treatment for their allergy as they do with the removal of foci of infection or any other form of treatment.

Probably the most common cause of ocular allergy is cosmetics, and soaps; then come the local agents used for hair wash and other cosmetic preparations which are used mostly by women. These produce a purely local sensitivity—so-called "contact dermatitis"—and elimination of the face powder, rouge, or face creams, and restriction of their further use will clear up the local condition and make the patient comfortable. However, there is a group of patients who have a local sensitivity to some of these substances in addition to an underlying general sensitivity that is the basis for their trouble. In each case of local dermatitis, it is advisable to make patch tests for all cosmetics and drugs the patient uses and to eliminate the use of any substance which gives a positive reaction. For edema of the lids and fine silver scaling on the margins of the eyelids, patients must use some substance to which they are not sensitive or use nothing except cold, dry compresses. Cases of blepharitis marginalis sicca often fall into this group; however, they usually are due to a general sensitivity, often a seborrhoeic dermatitis, and, in these cases, an entirely different approach of investigation must be used. This includes determination of allergens as well as examination to determine the presence of any foci of infection. In addition it is wise to determine whether they are sensitive to any bacteria, especially the staphylococci.

RECURRING CHALAZIA are best handled by checking the refractive error and muscle balance and then, if they tend to recur after the refractive error has been properly corrected, tests for allergy should be made and a careful regimen for elimination of allergens instituted in accordance with the results of the tests. Here, again, some general condition as well as some local irritant may be the cause, and unless the general condition is corrected chalazia will tend to recur.

RECURRING STYES fall into the group of conditions due to bacterial sensitivity. Usually the staphylococcus is the offending bacterium and, in addition to tests for the bacterials, allergens should be investigated if the autogenous staphylococcus vaccine does not tend to give relief.

At the present time, the part of the eye most frequently involved by allergy is the conjunctiva. Both the ocular and the palpebral conjunctiva may be involved in a reaction that is due to some substance to which the patient is sensitive. The first problem must be the elimination of purely local irritants that fall in the same group as external irritants or so-called "contact dermatitis." When the sensitivity is due to some transitory process, such as paint with its turpentine or fast-drying substances, or the use of dusting powders, the condition will clear up when that substance is eliminated. The appearance of the palpebral conjunctiva in such instances is that of a very low-grade, edematous reaction in which the conjunctiva is slightly hyperemic, small pinpoint-like granules being seen over the entire lower surface of the lower lid. The patient has the feeling that sharp, needle-pointed foreign bodies are cutting across the cornea when the eyeball is moved. The best local treatment for these patients is the application of cold compresses and adrenalin if patients are not sensitive to the adrenalin. It is unwise to submit these patients to general studies for determination of allergens on the first appearance of a conjunctivitis. However, if it tends to recur on the least provocation or if there is a recurrence of the previous conjunctivitis, it is wise to make these examinations in order to rule out the possibility that some other substance is causing the underlying condition which makes the ocular conjunctiva so extremely sensitive.

The greatest amount of study in conjunctivitis due to allergy has been directed to the so-called vernal conjunctivitis or "spring catarrh." In 1923, Townsent called attention to the frequency of vernal catarrh in patients with hay fever. Lehrfeld of Philadelphia and others have contributed greatly to this field of study. In our experience vernal catarrh has been, in most instances, due to some allergen. Not infrequently this conjunctivitis appears in the spring during the season of the tree pollens and is carried forward by other reactions to pollens. It is very difficult in most instances to determine the pollen that causes vernal conjunctivitis. However, by careful study and rechecking, the substance that is causing this tremendous reaction in the lid will be found. We have found that the best treatment for local relief has been the use of cold compresses, adrenalin, and mild anesthetic substances to prevent the patient from rubbing the eyes too severely. During this stage of severe inflammation, however, it is better to use radium, if possible, in order to shrink down the large masses of polypoid tissue and give the patient some relief. There is little or no danger connected with a vernal conjunctivitis insofar as the eyesight is concerned. There is a tremendous amount of discomfort, however, and the patient is unable to carry on his work because of the marked photophobia, lacrimation, and blepharospasm. Scraping of the lids has not been successful in our hands for the simple reason that the reaction has been great and we feel that the use of radium is much more satisfactory.

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*Presented at the sixth-fourth annual meeting of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., February 1953.

The minute granular reaction of the lids is usually due to sensitivity to some food which should be eliminated following careful study. In some instances, a contact dermatitis may be the etiologic factor, and further study should be made to determine any possible causative substances in the home or place of work.

The bulbar conjunctiva is frequently involved in a chemical conjunctivitis as well as in other types of contact conjunctivitis and here, again, the history of the patient must be carefully worded out and a study made of his daily activities and surroundings.

Except in a very few instances, involvement of the cornea is usually due to some general allergic condition and not to any local, so-called "contact dermatitis". However, our most outstanding case of corneal involvement was in a girl who had a serious corneal desquamation in each eye. It was found that she was extremely sensitive to orris root and only to orris root. Elimination of this substance from her daily routine produced complete relief and she has not had a recurrence of the process.

Conjunctivitis associated with keratitis is usually due to a general process. In every instance of keratoconjunctivitis and phlyctenular keratoconjunctivitis, a study for allergy should be made, as well as investigation to determine whether it is a tuberculous process. In many of the patients with phlyctenular keratoconjunctivitis, the process is caused by an underlying food sensitivity and, unless this is eliminated, there will be recurrences of the condition with scarring of the cornea. It is my belief that in no instances should the patient be given tuberculin therapy or any other treatment for tuberculosis unless the possibility of food allergy has been carefully checked. It has been our experience that some of those patients with questionable tuberculosis have been relieved by the administration of a diet high in vitamins, including one or two quarts of milk every day and one of the fish oils. In several of these patients there has been a sensitivity to the fish oils or milk or some other food, and I believe that this has definitely made their eye condition worse. Milk is not a substance that anyone with allergy can take without careful study. Many of the youngsters have sensitivity to milk, in which case it must be definitely eliminated from the diet and another food substituted.

The involvement of the cornea ranges from a very fine punctate-like keratitis to the involvement of the entire cornea in one large corneal desquamation. At first, the superficial epithelium of the cornea is involved but, as the process continues, there is a deep interstitial involvement with permanent scarring. It is, therefore, important that these patients be carefully handled and submitted to a careful study early and then they will obtain a good visual result, as well as relief from the photophobia, lacrimation, and blepharospasm. If the process is prolonged and recurrences take place, interstitial vascularity occurs, resulting in permanent scarring with definite loss of vision. In conjunction with the keratitis, there may be a secondary iritis. The pupil must be kept well dilated with atropine, scopolamine, duboisine, or some other substance to which the patient is not sensitive. It is important that this warning be given here because of the marked sensitivity these people have to the alkaloids, atropine being a very prominent one, and the patient, under no circumstances, should use atropine if sensitivity exists, as it will add to his discomfort and increase the local irritation. This is also important in the use of other substances around the eye in people who have a definite sensitivity.

Once the diagnosis of allergy is made, no substance should be placed in the eye unless one is absolutely certain that the patient is not sensitive to it. It is not difficult to make patch tests and in most instances these patients will be much more comfortable without the instillation of any drugs, using dry, cold compresses and some adrenalin, if the patient is not sensitive to the adrenalin itself. In this regard, one must be very careful in using the mild anesthetics that are employed commonly around the eyes. Some are extremely irritating to patients who have a sensitivity and again, unless one is careful, the eye may become involved in a marked desquamation with secondary scarring. Wherever there is a corneal desquamation due to sensitivity, it is wise to cover the eye with an eye pad or some cover in order to eliminate the sensitivity to light as most of the patients with keratoconjunctivitis have a marked sensitivity to light. Once the offending substance is eliminated, a good recovery is made, providing the treatment has not been too severe. Silver nitrate and other irritating substances must not be used if good results are to be obtained.

We have not encountered involvement of the deeper corneal structures except secondary to long-standing, recurring, superficial involvement. The deeper structures are also involved in an allergic type of reaction. Excessive lacrimation due to hyperactivity of the gland is usually a secondary manifestation, being due to the irritation [illegible] conjunctiva rather than to the true sensitivity of the gland. However, in three instances, we have been unable to find any change in the lids except that due to the marked lacrimation. Two of these patients have had deep radiation therapy to the lacrimal gland with success; the other has been treated in the same manner but without success.

The iris is not an uncommon seat of allergic reaction. This type of iritis is not serious and is of a mild form, but it is painful because of the light stimulus. In two of our cases, the iritis occured during the hay fever season while the patient was having an extreme reaction due to a pollen. Dilatation of the pupil with atropine and hot compresses are indicated in this group because of the irritation accompanying the involvement of the iris. The patient should not use the eyes and care must be exercised to control the allergy in general.

Changes in the lens are found as a secondary manifestation and, in some instances, they are probably due to the allergy. We have operated upon a number of patients for removal of cataract, young people about twenty years of age, in whom marked lens changes had developed due to an eczematous condition. The purely individual sensitivity to a drug is shown by those patients who have dinitrophenol cataract. In contrast, compare the number of people who use the substance, while only a small number of them develop cataracts. However, in spite of the fact that the number is small, no one should use this substance because the tendency for cataract to develop cannot be ascertained before the drug is employed. Development of changes in the lens in these patients occur slowly and may appear even six to nine months after use of the substance has been discontinued.

All our patients with vitreous opacities are studied carefully to determine foci of infection and, in addition, studies to determine food allergens are made. It is not unusual to find that these patients have a marked sensitivity and, although the floating vitreous opacities do not disappear, they do not increase in number. If the patient adheres to the diet, he is made much more comfortable because, in conjunction with the vitreous opacities, there is slight irritation and some photophobia. If these patients are studied carefully, it is found that they do have a slight hyperemia of both discs and the retina. The margins of the disc are hazy and the entire disc is reddened.

The discs and retina are involved in allergy as frequently as any other part of the eye. A local wheal may involve the nerve head, showing a definite papilledema of 2, 3, 4, or more diopters, which is definitely due to an allergic reaction. We have several patients who can produce edema of the disc if they violate their diets and indulge in substances to which they are extremely sensitive. This is also true of some of the so-called "cases" of retrobulbar neuritis. These patients evidently have a retrobulbar edema of the nerve but, by a careful study and elimination of allergens, recovery of the use of the eye is made. It is my opinion that no patient with nerve head involvement should go without complete investigation of allergy.

We have seen several cases of retinal detachment which have been definitely associated with allergy—serous type of detachment with marked tendency to recur—one associated with head cold, and another associated with hay fever.

Patients with so-called toxic neuritis due to a definite sensitivity to a certain substance may also be sensitive to other substances which, over a period of time, produce low-grade atrophy of the nerve heads and other allied conditions may also be produced by continued general sensitivities extending over a long period of time.

It is more difficult to determine the part played by allergy in a chorioretinitis or retinitis than in any other part of the eye. At the present time, we have only a small group of patients in whom we believe the problem is definitely one of sensitivity. However, better permanent results will be obtained in these patients who have an irritation of the retina due to an infection in the tonsils or teeth if the infected area is swabbed and the material used for culture. Then a vaccine should be made and the patient given the vaccine over a long period of time after the focus of infection has been removed.

In the last five years, we have been making a very interesting study on patients with myopia and keratoconus. These patients have been studied from every point of view, including the possibilities of glandular involvement, as well as for foci of infection. In going over the records we have found that each and every one of them has a very definite sensitivity. In some cases this is not as marked as in others, but each has a positive reaction to some substance, mainly the foods. It is not unusual to find that the younger patients with myopia have sensitivities to milk, butter, eggs, and chocolate; whereas, in the older group, they tend to have a reaction to pollen as well. In this study, more than a hundred patients have had definitely positive reaction to one or more substances. We feel that the myopia tends to be less progressive and, in some cases, not to progress at all. Sufficient time has not elapsed for a definite statement to be made that myopia is due to allergy, but the large number of patients who have myopia and are sensitive, and the fact that the sensitivity seems to go along with the development of the myopia, would seem to substantiate this belief.

Patients who have keratoconus tend to have a higher ratio of sensitivities than do those with myopia. We have not yet attempted to type the various cases of myopia but this probably will be done in the near future. In some patients, we have been able to follow the course of the myopia through the seasons of their worst pollen allergy and have found that the greatest change occurred during that period in which the general body sensitivity was at its height. We have handled these patients by making careful refractions, prescribing well-regulated diets, and substituting for the foods that are eliminated other substances such as dicalcium phosphate, vitamins A, B, and D, as necessary. Here again, care must be exercised to determine that the patient is not sensitive to milk and cod liver oil. As time elapses, further reports will be made on this clinical study but, to date, it must be said that the possibility that allergy plays a part in the development of myopia is very strong.

I have seen one patient with exophthalmos due to edema of orbit. The entire orbital tissue was edematous and the eyeball was proptosed to a slight extent. Edema of the lids is not uncommon in allergy, especially edema of the lower lids, and the so-called "morning edema" of the lids is probably due to a feather pillow or some other substance with which the patient has been in contact.

Patients who have ocular manifestations of allergy usually present similar pictures. The process is irritative and chronic, tending to recur over a period of years. Periods of remission may extend from six months to several years. A careful survey of these patients is very important because, if the process can be arrested, the eyeball is usually restored to normal condition with little or no sequelae. If, however, recurrences are numerous, the tendency to formation of secondary scar tissue follows with permanent damage.

Allergy does not explain all the conditions around the eyes. However, in patients who suffer from recurring eye lesions when foci of infection including the cervix and prostate have been searched for and removed, bacterial as well as general allergy should be considered. It may be that the allergic response to the bacteria is causing the eye condition. However, if all foci have been removed and they no longer present any possibility of infection, allergy must be considered and a careful study of the general condition made. Careful history and a thorough physical examination must be included.

A patient on a diet for the elimination of allergens may not get well for the reason that he does not adhere to the dietary regimen. Some local treatment is indicated in order to draw attention to the fact that he must be careful regarding the use of his eyes and that he must continue to follow his diet in order to take care of the local condition. In most instances, it is wise not to subject the patient to very irritating substances, because the patients with sensitivities are usually sensitive to most of the drugs and medicines. Most of the patients who have allergy will not be reluctant to have a complete study, as they have had the process over such a long period of time that they will be willing to have anything done in the hope of securing some relief. However, after treatment of allergy for at least three months, without any results, it might be wise to repeat the entire examination in order to ascertain whether or not some etiologic factor might have been overlooked.

It is my opinion that, as we study these patients more and more from the point of view of general systemic involvement, we will eliminate many of the patients with the so-called "idiopathic conditions." The field is still undeveloped and offers an excellent territory for research and clinical study.

1553 Woodward Ave.

Cancer of the Stomach and Its Early Symptoms

HUGH A. GAMBLE, M.D.,F.A.C.S.
Greenville, Miss.

The American Cancer Society has three main objectives: (1) The education of the public as to the early symptoms of cancer, (2) The provision for treatment of indigent cancer cases, and (3) Research in regard to the cause of cancer. The cure of cancer depends upon its early recognition. The American Cancer Society has carried on for the past several years an intensive campaign to educate the public as to the early symptoms of cancer as it affects various organs in the body.

Cancer of the stomach is the most frequent form of cancer found in the human race.

More people die from cancer of the stomach than any one form of cancer.

Fewer persons recover from cancer of the stomach than any other form of cancer. Of one hundred suffering from gastric cancer not over five will live five years. Fifty of the hundred when first seen will already be too late for treatment. Of the other fifty, if an exploratory operation is performed, one half will be found too far advanced to be benefited by removal of the growth and of the remaining twenty-five not over five will live five years; some authorities say four.

The foregoing statements paint a gloomy, almost hopeless, picture for anyone suffering from cancer of the stomach; and yet cancer of the stomach is just as amendable to treatment, can just as surely be cured as cancer in any other organ of the body if recognized in its early stages. We have the means of diagnosing these lesions in their incipient stages and most cancers of the stomach give a characteristic history of symptoms having been present from eight to twelve months before consulting a physician but, unfortunately, the public and the clinician as well have not been educated as to the significance of the early symptoms presented and it is for this reason that the American Cancer Society has carried on an intensive campaign through the radio and the press, as well as other forums, to bring a more definite knowledge of these symptoms, that the condition will be recognized and fatal delay eliminated. Cancer of the stomach is primarily a purely local disease and its cure, as of all other forms of cancer, depends upon its early recognition when it can be completely removed.

While about 10 per cent of cancers of this character develop before the age of forty years, the vast majority are found between the ages of forty and seventy years and for practical purposes the early symptoms can be placed in two general groups as done by Delgado whom I quote. "(1) Non-painful gastro-intestinal symptoms. In the majority of instances the patient with cancer or carcinoma of the stomach notices a vague epigastric uneasiness after meals with moderate distention and a sense of heaviness in the epigastrium or pit of the stomach. Most patients give no history of any previous gastro-intestinal or digestive disturbance. These indefinite symptoms may be accompanied by relatively easy physical and mental fatigue and an inexplicable distaste for food, particularly meat. With the continuation of the symptoms a slow but progressive weight loss may ensue with a minimal degree of secondary anemia. Unfortunately, during this period the diagnosis of cancer of the stomach is seldom considered. The patient is classed as a neurotic, is not given a thorough examination, is given symptomatic medication for the anorexia or loss of appetite, and treated for anemia without resort to diagnostic roentgenology or x-ray studies and this most valuable period of time for a cure is lost never to be regained. It is usually from eight to twelve months from the incipiency of these symptoms until the disease is recognized and by that time the diagnosis is clarified by other easily recognizable clinical findings." It has crept upon one in the majority of cases like a thief in the night and the eight to twelve months period of grace when the patient could have been cured is irretrievably lost.

In the second class symptoms are fewer than in the first, characterized more particularly by the presence of pain due to the development of cancer in a pre-existing ulcer of the stomach. To quote again from Delgado, "The second class of symptoms (the ulcer variety) is painful. This clinical type, as said, is much less frequent than the first. Sometimes there are gastro-intestinal symptoms for a number of years. These are periodic and relieved by alkaline powders, food and milk, or other symptomatic remedies. So long as it is due purely to ulcer, pain occurs shortly after eating and may be relatively severe but as cancer develops the character of the pain changes and becomes more persistent, constant, oppressive and boring in character with weight loss. Often a diagnosis of pelvic or duodenal ulcer may be made and an ulcer regime prescribed and in a percentage of instances this procedure engenders considerable local clinical improvement.

It is not unusual for the patient to gain some weight, if iron is given for the anemia to respond to it, but if the symptoms are caused by the development of carcinoma or cancer the lesion does not heal. There is a continued loss of blood, sometimes free, usually more of an ooze, and after a varying period of time the symptoms will recur with increased vigor, and a more constant and a continuous type of boring pain. For this reason ulcers of the stomach are always regarded with suspicion unless they heal promptly under an ulcer régime of treatment.

The foregoing are the most early important subjective symptoms of cancer of the stomach. Following ulceration which involves the mucosa of the stomach, the muscular wall of the stomach and often perforates, there inevitably occurs pain of a constant boring character associated with what is known as occult blood in the bowel evacuations. A simple gastric ulcer will often heal completely under an ulcer régime and does not necessarily bleed but a cancer never heals and always bleeds to some extent and evidence of occult blood is present in the bowel evacuations.

To recognize cancer in its early stages it is essential that the public be informed as to what these early symptoms are, that the clinician or physician should be cancer conscious and, third, and most important, that the patient be referred to a thoroughly trained roentgenologist. Not everyone who has an x-ray is capable of diagnosing these early lesions. As a matter of fact, there are probably not more than ten men in the state of Mississippi who have had such training as would qualify them to do so. In trained hands one can be assured of an accurate diagnosis in over 90 per cent of the early cases by x-ray. The x-ray in competent hands has proved the greatest single aid in the positive diagnosis of early cancer that we have. It shows changes in the peristaltic waves of the stomach incident to the presence of cancer, also changes in the pattern of the mucous membrane in the involved segment when ulceration has taken place, and later as the tumor grows and projects into the lumen of the stomach one can demonstrate what are known as filling defects, or still later when ulceration has occurred and more tissue has been destroyed, what is known as a niche or hollowed-out area, and finally as the growth reaches a more advanced stage, obstructive areas especially where the stomach empties at the lower end into the duodenum or small bowel or at the cardiac end where the blood first enters the stomach from the gullet or esophagus. In the early stages of cancer of the stomach there are a few areas in which it is difficult to demonstrate the growth, notably on the posterior wall and some parts of the fundus. Fortunately, cancer is not frequently found at these points.

In addition to the x-ray there has also been developed what is known as gastroscopy or the introduction of a tube into the stomach through which the stomach wall can be examined visually, and, third, are the laboratory findings, most notable of which is Papanicolou's test for cancer cells, which is growing into greater usefulness every day. Other suggestive laboratory findings are the absence of free hydrochloric acid, the constant presence of occult blood in the bowel evacuations, the anemia, the weight loss, the familial history of cancer of the stomach, and the epigastric pain with possible tumor formation in the pit of the stomach which, when all taken in conjunction, gives us an unequivocal diagnosis.

However, the most important symptoms from the lifesaving standpoint and the early recognition of the disease are those first enumerated, that is, *first*, epigastric discomfort, distention of the upper abdomen, indigestion, loss of appetite or anorexia, distaste for certain foods, particularly meats, familial history of gastric cancer, constant presence of occult blood in the feces, and in the *second* classification, pain after eating, constant and boring in character, occult blood again with the x-ray findings upon early examination.

The treatment of cancer of the stomach is purely surgical and demands a complete removal of all involved areas including metastatic glands. The stomach is one of the easiest organs of access in the human body and if the diagnosis is made early presents but few difficulties in the removal of a part, a partial gastrectomy, or if necessary the whole organ, complete gastrectomy.

When all of us, both the physicians and the public, have been educated as to the importance of the early subjective symptoms and the need for a close, careful investigation as to their cause by x-ray examination, laboratory tests, Papanicolou's test, examination of feces for occult blood and the laboratory tests previously enumerated, we will have established the early diagnosis of cancer of the stomach upon a foundation which will place the cure of cancer of this organ comparable to that elsewhere in the body and instead of the present gloomy outlook of 4 or 5 per cent cures over a period of five years, we, in my opinion, should reasonably expect 75 per cent of five-year cures. The cure of cancer of the stomach depends, as the cure of cancer elsewhere, upon early recognition and its treatment while it is still purely a local process.

Defining Our Levels and Motivations*

J. T. GRANTHAM, Executive Assistant
Mississippi Baptist Hospital
Jackson, Miss.

THERE ARE several problems which are most significantly facing the hospital field now and in the years ahead.

The first applies specifically to the somewhat lackadaisical attitude of member hospitals in the associational activity. In fact, one of the obstacles to the work of Charlie Flynn has been a passive indifference in some quarters, even in activity specifically and directly pointed toward the betterment of the individual hospital. I would make a genuine appeal to hospitals, and particularly to administrators and boards, to re-evaluate the benefits to be derived from concerted effort as represented by the full-time work of our state hospital association. It is an accepted fact that the success of any concerted effort depends directly upon each party involved fully accepting his own serious responsibility in the effort. I believe that a strong hospital association with an efficient central office as its voice will have a great deal to do with raising a level of hospital care in our state and of taking its place in the public's eye as the topmost service institution of any community.

The next matter that I would discuss with you is the one which has required more time on the part of your officers and your central office this year than any other one thing. This is the nursing situation. We in hospitals see this problem in a very real way in that we just cannot provide proper nursing care for sick people because there are not enough nurses. This problem is greatly aggravated by the fact that nursing education is going through a transition period in which what some of us believe to be long-time basic philosophies of nursing are being questioned and subjected to serious and sometimes radical analysis.

The leadership of organized nursing (and I do not make bold to question sincere motivation in the main) is intent upon raising the standards of nursing education, seemingly for the most part from an academic or scholastic point of view. To this end, considerable pressure is being exerted to make the training of graduate nurses a purely educational process as compared to what many believe to be the time-worn concept of a combination educational and practical experience process. Many sound-thinking people in the health field fear that the very apparent trends in nursing at this time may result in placing even the three-year graduate nurse above and beyond the actual bedside care of the sick person; and this before any other group is prepared to take over. In my observation during this past year it is still my firm conviction that the greatest need in meeting this problem is a genuine spirit of understanding and give and take on the part of all professions concerned in the care of the patient in hospitals, homes or any other institution where such people may be cared for. A very practical viewpoint of many people seems to be that the immediate need is to establish levels of nursing—the practical nurse to do the menial tasks necessary in the care of the patient, the three-year graduate nurse to provide expert and technical and supervisory care to the patient and the collegiate nurse to develop in the fields of supervision, administration and nursing education. The conception of the training of the practical nurse and the three-year graduate nurse would be basic nursing and would not attempt to crowd into a basic program something of many fields of specialized nursing. It would most likely provide for the three-year graduate nurse, if she so decided, to continue further with her education and training, without being penalized for having selected the basic course as a beginning. So far, probably the best approach to the problem in our state is the Nursing Committee that has been formed under the sponsorship of the Mississippi Commission on Hospital Care and which Commission by law is charged with certain nursing education responsibilities in this state. This committee is composed of two members each from all allied organizations. This large committee has formed a small subcommittee to do most of the actual detail work. The subcommittee is composed of seven members, one each from the State Nurses Association, the State Board of Nurse Examiners, the State Hospital Association, the State Medical Association, Institutions of Higher Learning, the Department of Vocational Education (practical nursing) and the State Farm Bureau. This committee is charged with the responsibility of sitting down around the table and in a spirit of understanding and give-and-take lay out a plan that they believe will bring order out of a confused situation and provide an intelligent and satisfactory approach to the task of providing the best possible trained personnel in sufficient numbers to care for the sick people of our state. Personally, I am thoroughly convinced that if we put our own house in order and get rid of the confusion within our ranks we can easily inspire and recruit young women for the high and noble profession of nursing in sufficient numbers to provide this care.

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*Annual president's address delivered before the meeting of the Mississippi Hospital Association, October 15, 1953, Biloxi, Miss.

Now, I should like to mention a matter which I believe to be so very basic to everything we are trying to do in the hospital field. In facing our problems day by day I am afraid that we have been prone to assume almost automatically that our problems are all brought upon us by an unkind fate and a public void of sympathetic understanding and that we in no way have contributed to our problems. I am going to make bold to say that a very frank and perhaps brutal self-examination of our deepest motives and purposes may just be our greatest need at this time. In this beloved land of ours we seek and dream of a better America without ourselves as individuals being willing to pay the price to become better Americans. In this day of bigness and mass production when almost everything and everybody is organized, we may have forgotten that the level of character and motivation of any group is only as good as the character and motivation of the individuals who make up the group.

We want better hospitals: Then we as individuals must be better hospital people. In September at the meeting of the American Hospital Association I heard and later read in a convention digest publication the last sentences of the address of Mrs. Oveta Hobby, and I quote, "Of all the roles the American Hospital Association can play in modern medical care, perhaps this is the greatest—to infuse the spirit of love, of genuine concern, of personal, eager, warm encouragement into hospital staffs everywhere." And then the convention digest from which I read added that nobody doubted that this was true and nobody knew how it was to be accomplished. Well, I would not attempt to suggest how the American Hospital Association would lead but I would certainly suggest that there is a way, in fact just one way, by which such conditions could exist in your hospital and mine and it's this—that you and I as individuals, who are the hospital field, become just such individuals as to exemplify the spirit of love, of genuine concern and warmth, and of service. And then I would go a step further, to say that the only source for such graces as this is Jesus Christ, who Himself said "I am come that they might have life and that they might have it more abundantly." He said be allowed to live and be a reality in each of our individual hearts and lives. Of all our public institutions, perhaps none, other than the home and the church, has such a Christian heritage as ours, the art of healing mankind's hurts, conceived in the mind of Christ and blessed by a merciful Heavenly Father down through the ages. Ours is a terrific responsibility but in the light of His love a blessed privilege.

Treatment of Allergic States or Diseases*

GEORGE W. OWEN, M.D.
Jackson, Miss.

OUR PROGRAM chairman has advised that it is his wish to make the program of the medical section as much of a symposium on treatment as possible. He has requested that I talk with you about the treatment of some of the allergic conditions. I will not, of course, attempt to discuss all of the treatment used in the allergic diseases. I have chosen four points for discussion. It will be my effort to discuss each of these very briefly, and it is my hope that they will prove of practical value to you.

ASTHMA. I should like to discuss two points with regard to the treatment of asthma. The classification of the type of asthma with which one is dealing, is essential to adequate and proper treatment, and so, for this reason, this first point might more properly be called a diagnostic problem.

It would seem that therapeutic anarchy exists in the minds of some who necessarily must see and treat asthma. May I suggest, therefore, that when an individual is seen suffering with dyspnoea or asthma, that some effort be made to classify the type of asthma present in this individual's case. In your own mind make some effort to classify the type of asthma with which you are dealing before instituting treatment.

A simple etiologic classification which may prove helpful when applying treatment may run something like the following:

1. Is this a case of cardiac asthma? The age of the patient; the months or years since the first attack; the question of edema; and other diagnostic points which need not be covered here, will very readily, in most instances, determine whether this is a case of cardiac asthma. Obviously, if the case is cardiac asthma, the treatment applied would be entirely different from that of allergic asthma, and more properly fall within the realm of the cardiologist. Do not overlook the fact, however, that cardiac and allergic asthma can be present in the same individual.

2. Is this a case of asthma due purely to infection? If it is, the attacks are very infrequent. The attacks occur only when respiratory infection is present. The infection usually precedes the asthma by a matter of at least one to three days. If respiratory infections are infrequent, there may be periods of years between attacks of this kind. The repiratory infection may be present either in the upper or lower respiratory tract. Treatment should be directed primarily toward the infection itself. Palliative treatment of the dyspnoea is of course to be used, and the usual antiasthmatic drugs will ordinarily give satisfactory results. This type case is not difficult to control as a general rule. When the infection is controlled, the asthma is gone.

3. Is this a case of pure allergic asthma? Allergic asthma is a type of asthma frequently seen, and comprises that large group ordinarily referred to as bronchial asthma. The attacks are due to some specific allergen, or combination of allergens. The attack lasts from a few hours to one or two days. It responds to treatment with epinephrine, ephedrine, or aminophyllin (singly or in combination) very satisfactorily, and usually promptly.

4. Is this a mixed type of asthma? By this I mean allergic asthma plus respiratory infection. Most often the infection occurs after allergic asthma has been present 36 to 72 hours. I want to make my second point with regard to this type of asthma. Once in a great while, we will run into this so-called "mixed type", wherein we are dealing with cardiac asthma, allergic asthma, and infection; but obviously, this combination is rather infrequent.

5. Is this a complicated type of asthma? By this I mean allergic asthma complicated by emphysema, bronchiectasis, or both. No remarks will be made with regard to treatment in this particular type.

I think if you will keep these particular points in mind with regard to classification, that you will be more likely to apply the treatment which will yield the best results in the particular case. This is the first point that I wished to make.

MIXED ASTHMA. Now let us please revert to number four, or the mixed type of asthma, which I stated is an allergic asthma plus infection of the respiratory tract. It would be my impression that, by and large, I see more of this particular type of asthma than all the others combined, especially during the winter. This is the type of asthmatic who has suffered day and night, usually worse at night, for a period of weeks or even months. The infection may not have been recognized, or, if recognized at all, it has not been adequately treated. There may be periods of brief partial remission from time to time, but they remain miserable for the most part for weeks and weeks. We should remind ourselves, that, if an attack of asthma lasts longer than a very few days, that case is complicated in some manner, as a rule. Of course, in those cases with bronchiectasis or emphysema, we cannot expect complete comfort in breathing, but this is not the type case that I have in mind. Most of the mixed cases are complicated by simple secondary bronchial infection. Secondary post-nasal infection following hay fever is often present, and many times has preceded the asthma itself. The secondary post-nasal infection of hay fever certainly is a frequent accompaniment in this type of case.

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*Presented before the Section on Medicine of the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

As a general rule, it is not too difficult to determine whether or not this patient is having infection which is prolonging his asthmatic difficulty. To me, greenish or yellow purulent sputum means infection, regardless of whether that patient has fever, leukocytosis, or increased sedimentation rate. Many of these cases are running a low grade afternoon temperature. Many have increased white blood counts, but in others you will find the white blood count perfectly normal. The sedimentation rate is often moderately to greatly increased. In some cases there is no fever, the white blood count and sedimentation rate are normal, but the purulent sputum continues. And when present it would certainly be my feeling that we are dealing with infection.

Many of these cases have received antibiotic therapy until the temperature has returned to normal, but the purulent sputum continues. In other words, the infection has not been adequately controlled.

I would, therefore, suggest that temperature not be the criterion which determines the length of time that antibiotics or sulfonamides are administered. Certainly, we want to give the antibiotics and sulfonamides until the fever is controlled, but I would further strongly advise that these drugs be used continuously for at least six or seven days, or until the sputum is absolutely free of any trace of infection. This can usually be determined by the gross inspection of the sputum itself. Where the infection is thoroughly controlled, the sputum becomes mucoid, white and frothy.

It will take about three days to get the infection sufficiently under control to give the patient any appreciable relief of dyspnoea. You will, of course, want to continue antiasthmatic medication for temporary relief of asthma, right along with the antibiotics and sulfonamides.

After six full days of antibiotics, or sulfonamides, and antiasthmatic therapy, the iodides often prove helpful, provided the patient can tolerate them.

And so, the second point that I wish to make is, in the treatment of the asthmatic complicated by simple respiratory infection, the antibiotic and sulfonamide therapy should be continued probably for six days, or until all traces of pus have disappeared from the sputum.

HAY FEVER. The treatment of hay fever has always presented a problem. I should like, very briefly, to call to your attention the use of a product which has been utilized by some men over a period of years, with very good results in the handling of hay fever cases.

In spite of present knowledge, the elimination of offending agents, desensitization, antihistamines, etc., treatment in some cases is unsatisfactory. Specific desensitization is the method of treatment which would seem to, and of course does, offer the most. However, it is time-consuming and at times disappointing. These cases that are under treatment, using antihistamines and following all of the accepted plans of therapy, but who still fail to get results, are the ones that I wish briefly to discuss.

The object of treatment, of course, is to relieve the nasal blockage, and provide the much desired nasal respiration. Our friends in the nose and throat field will still probably wish to accomplish this end by the use of nose drops, sprays, irrigations, oils, anesthetics, etc. Personally, I feel that in uncomplicated hay fever these methods are contraindicated. I still prefer the antihistamines, ephedrine, or ephedrine-like products, or both, to accomplish this end. A highly sensitive nasal mucosa needs no insults from drugs applied locally, when the offending allergen is already insulting it sufficiently to produce nasal congestion, edema and blockage.

In 1929 and 1930 Hajos, Corupi, and Sucher called attention to the beneficial effect of *parathyroid extract* in vasomotor rhinitis, angioneurotic edema, and other allergic disorders. *This* is the product that I would like to bring to your attention now.

The hypodermic use of parathyroid extract in intractable cases of hay fever and allergic rhinitis is usually most gratifying, and sometimes rather spectacular. A dose of 0.50 cc. daily for a very few days is usually adequate. Doses of 1.00 cc. may be given if the case is severe. In children, 0.25 cc. doses may be given. Sometimes one injection will bring relief within twenty-four hours. The dose may be given daily, and occasionally eight or ten doses may prove necessary. If the case is severe, 15 grs. of calcium gluconate intravenously may be given with the initial dose of parathyroid extract.

Parathyroid appears to be the pace maker in calcium metabolism. It has to do with the passage of electrolytes through the cell walls, thus affecting cell permeability. It is claimed by some that it thus overcomes water-logging of the tissues. Usually three or four doses of parathyroid extract are all that is necessary. Parathyroid extract tablets and calcium orally may be given to maintain blood concentration of calcium if desired.

Specific desensitization may, of course, be carried out whether the above plan is used or not. In fact, you would naturally have the patient observe avoidance of offending inhalants, elimination of offending foods, and continue desensitization; also use the antihistamine or ephedrine-like drugs for temporary relief. It is when all these measures have failed, you will find the parathyroid therapy will turn the trick and bring the desired relief.

PENICILLIN REACTIONS. The fourth point that I should like to discuss briefly is treatment of penicillin reactions. The widespread use of penicillin in present day practice, and the reactions incident thereto, should make a pertinent subject for discussion at the present time.

I had known of and read about this product in previous years, but I am indebted to Dr. R. J. Moorhead of Yazoo City, for recently bringing this subject to my attention again. In January of this year, he was kind enough to send to me an article which appeared in the *Postgraduate Medicine* in January, 1952. This article was upon the subject of serum-sickness-type of penicillin reactions treated with sodium decholin, by Pelner, Louis, and Waldman.

Kindly permit me to quote Pelner and Waldman, from an article which appeared in the *American Practitioner* in April, 1952:

"The alarming increase in the number of severe penicillin reactions makes the routine treatment of infection with penicillin hazardous. Every injection must be given with full realization of the great potentialities for harm if the patient should be sensitive to penicillin. A sufficient number of fatalities have been reported to jar us into the realization that penicillin should be given only for infections that it can reasonably help, for conditions of such severity that temporizing would be dangerous, and provided that the patient has never had a previous reaction. If the patient has had a severe dermatophytosis previously, cross sensitization may develop, and penicillin may have to be withheld. We have noticed in an evaluation of the literature and in our own practice that the male-female ratios of severe serum-sickness-type of penicillin reactions are about three or four to one, respectively[1]. This may be due to the more frequent occurrence of severe dermatophytosis in the male, but it may be due also to more fundamental factors. The female patients with the serum-sickness-type of penicillin reactions seemed to be less ill than the male. It is rarely noted in children, although the number of injections given in this age group far exceeded those given to adults. This may also be due to the factors described above."

Some investigators hold that there is no relationship between anaphylaxis and allergy. Others feel that there is a very definite relationship between these two phenomena.

In the past four decades, there has been ample experimental evidence to feel that the liver plays a most important role in the production of anaphylaxis. There is also good evidence that hyper-sensitiveness in man, and anaphylaxis in lower animals, are dependent upon factors common to both. The reaction in both would seem to be smooth muscle spasm and leakage of serum into the perivascular spaces.

In 1939, Shay, Cohen, and Fels, in the *American Journal of Digestive Disease*, reported some cases with hepatic and biliary disease with chronic urticaria. They began to wonder if the liver might not be playing an important role in chronic urticaria and, by inference, in other allergic conditions. They began to feel that the liver acted as a filter and detoxifying organ. They felt that adequate stimulation of liver cells convert the organ from a sieve to a filter, and prevented allergens from reaching the sensitized tissues.

It would appear that there are three types of reactions to penicillin. One of these occurs twenty to thirty minutes after the injection, and might be referred to as the anaphylactic type. The most commonly encountered severe reaction to penicillin simulates serum disease. There is still another type, which is the eczematoid trichophytid-like type of reaction, based on previous sensitivity. The type that I should like to discuss in this paper is the commonly encountered delayed serum-sickness-type of penicillin reaction.

The period between the administration of penicillin and the appearance of symptoms varies from seven to twenty-one days as a rule, but I think that I have personally seen one case at least who presented symptoms at six weeks after the penicillin was administered. Obviously, there have always been previous administrations of penicillin.

Deaths have been reported from the delayed type of penicillin reactions. However, even if this were not true, those who experience this reaction are sufficiently ill and uncomfortable to welcome any method of treatment which would cut short or reduce their period of discomfort. Many drugs have been used for the treatment of delayed serum-sickness-type of penicillin reactions. Without attempting to comment on these various drugs, I would like to call to your attention *sodium dehydrocholate*, which was reported by the above mentioned investigators.

They gave 5 cc. of sodium dehydrocholate (20 per cent solution sodium decholin) intravenously every day or every other day, depending upon the severity of the penicillin reaction. In addition, they gave one tablet of dehydrocholic acid (Decholin 3¾ grains) orally t.i.d. They claimed that it had not failed them in any of the serum-sickness-type of penicillin sensitivity.

Since January 1, 1953, I have had occasion to use this product in only four cases. So far, the result in each case has been dramatic and prompt. Epinephrine, ephedrine and antihistamines may be used for such temporary relief as they afford. In my experience, I have never had to use more than four intravenous doses in any one case. In one case, I used only one intravenous dose.

Sodium dehydrocholate would seem to be an innocuous drug, and has not been known to cause any harm. It is supplied in ampoules as sodium decholin by Ames Company. From my limited experience with it and the reports mentioned, I believe that I can recommend it to you in the delayed serum-sickness-type of penicillin reaction.

DISCUSSION

Dr. Everett W. Ryan, (Charleston)— The paper just presented was so complete and so clearly presented that it seems a discussion is hardly necessary.

Asthma is mainly a symptom and the first thing necessary is to find its cause. The importance of diagnosis and proper classification of the condition which we are about to treat cannot be overemphasized. Every doctor, especially the general practitioner, has to treat asthma in emergencies whether he wants to or not.

I agree with Dr. Owen that probably the greatest omission in the treatment of asthma, especially mixed asthma, is that of patient and the physician are prone to relax the treatment once some relief has been obtained and fail to continue treatment until maximum benefits have been obtained. It then becomes our responsibility to keep this in mind and so instruct our patients.

I would like for Dr. Owen to give us his opinion on the use of ACTH and cortisone in asthma and in which types of asthma this treatment would be indicated, if at all. I would like for Dr. Owen to tell us how to test for horse serum and how to interpret the positive reactors.

In hay fever, it is believed by many that much can be done in prevention, especially in children of allergic parents. This, they say, can be accomplished through attention to the environmental factors involved, watching the diet, attention to mild cases of allergy, occupational hazards and early treatment of infectious diseases, especially the common cold.

I have had no experience with the use of parathyroid extract in the treatment of these conditions and was very much impressed by the results reported. Neither have I had any experience in the use of sodium decholin in the treatment of serum sickness type of penicillin reactions.

The dangers of penicillin reactions are becoming more acute daily. We see too many of these reactions and unless more care is taken regarding future use of penicillin, more and more people will become sensitized.

I happen to be one who is sensitive to penicillin and I have had a contact dermatitis for past four years. I recently used piromen, 4 gamma per cc., subcutaneously, in ½ cc. doses at intervals of 3 or 4 days. Improvement was noted within 24 hours after the first injection. After the third, my hands were nearly normal and piromen was discontinued. Following this experience I thought

I had really found something that would work on my patients but, like so many reported drugs, it failed to improve the next two patients on whom it was tried.

Dr. O. E. Ringold (Cleveland)— I would like to say a few words about the treatment of status asthmaticus. This terrifying condition may sometimes be induced by the use of opiates, atrophine or the antihistamines in an asthmatic patient. When the usual treatment for asthma has failed to give relief the patients should be hospitalized. They are often unresponsive to the injection of adrenalin because of its repeated use; this is especially true of the one who has learned to shoot himself and does so at every suggestion of asthma. ACTH 20 mg. 1000 cc. normal saline is given slowly intravenously over a period of 6 to 8 hours. Antibiotics instituted to prevent secondary or runaway infections frequently observed with ACTH therapy. Chloral hydrate one gram either orally or rectally as often as necessary for sedation.

Aminophylline in doses of from 3¾ grains in 10 cc. distilled water may be given intravenously at the rate of 1cc. per minute. This may be repeated in 8 to 12 hours. If these injections become necessary for several days, a continuous infusion may be started. Add 7½ grains aminophylline to each liter of 5 per cent glucose in distilled water. Three liters should be given in 24 hours with a flow of 30 drops per minute.

Oxygen or oxygen and helium may give gratifying relief. However, some authorities condemn its use in status asthmaticus because of the drying effect upon the bronchial mucosa and because respiratory acidosis with progressive coma and death may follow the sudden administration of high concentration of oxygen.

Ether anesthesia may prove of great value in the very stubborn cases by use of ether in oil per rectum or a deep inhalation ether anesthesia for a period of 45 minutes.

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No life can be pure in its purpose and strong in its strife and all life not be purer and stronger thereby.

—Owen Meredith

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Ballistocardiography in the Office Practice of Cardiology

WILLIAM H. ROSENBLATT, M.D.
Jackson, Miss.

ALTHOUGH THE term "ballistocardiogram" was origmated by Starr in 1939[1], the movements recorded by him have been known for some 75 years. Analogy of these movements has been drawn to those of the bathroom scale pointer when one stands quietly on the platform, the pointer deflecting with each pulse. The earlier studies were predominantly concerned with the calculation of cardiac output; however, recently, qualitative aspects, namely, analysis of patterns and their clinical application, have been emphasized. Although much of the mechanics of ballistocardiography remains incompletely understood, with proper approach valuable diagnostic and prognostic information can be obtained. The ballistocardiogram is by no means a substitution for the electrocardiogram; it is simply another extremely valuable tool in the complete cardiovascular system examination and evaluation, much as the x-ray, fluoroscope, or electrocardiogram. While the electrocardiogram reflects electrical potential changes during the cardiac cycle, the ballistocardiogram represents mechanical events and is more nearly related to the efficiency of heart action as a pump[2].

WHAT IS A BALLISTOCARDIOGRAM?

A ballistocardiogram is a graphic representation with respect to time of the motions imparted to the body by cardiac systole and the subsequent circulation of the blood mass through the vascular system[3],. The underlying principle of the ballistic movements of the body resulting from cardiac action is Newton's third law of motion, which states: "To every action there must be an equal and opposite reaction."

TYPES OF APPARATUS USED IN RECORDING BALLISTOCARDIOGRAMS

1. Horizontal, undamped, "high frequency" table developed by Starr[1].
2. Critically damped, "low-frequency" table devised by Nickerson[4].
3. Vertical ballistocardiograph[5].
4. Torsional[6].
5. Tilting[7].
6. Direct body types:
   a. electromagnetic[8].
   b. photoelectric (Sanborn)[10].
   c. piezoelectric[11].

As pointed out by Reeves and associates[9], the direct body ballistocardiographs all suffer from being difficult to restore to a given point of sensitivity, and are therefore apt to give different amplitudes at various times for identical body motions, a minute change in positions of the generating components causing a major change in amplitude of ballistocardiographic deflections. This renders it difficult to compare tracings from subject to subject and serial records on the same patient. Another problem in the use of such apparatus is the timing of complexes which, as will be pointed out later, bear a relationship to certain physiologic events in circulatory dynamics. Therefore, the tracings presented in this report were obtained employing the Technitrol horizontal ballistocardiograph, a Starr-type instrument which is calibrated by applying a horizontal force of 280 gms. with a resulting deflection of 1 cm.; the amplifier being connected to the D. C. preamplifier of a Sanborn twin-viso instrument, thus allowing for simultaneous recording of the electrocardiogram and ballistocardiogram.

WHAT IS THE NATURE OF THE BALLISTIC COMPLEXES?

During the cardiac cycle certain headward or positive waves and footward or negative waves are recorded. These waves have been arbitrarily designated by Starr as the H, I, J, K, L, M, N, and O waves. The normal ballistocardiogram has four main systolic waves: H, I, J, K; and the following diastolic waves: L, M, N, and O. F and G[12] waves have also been described. The H, J, L, and N are headward or positive waves; the I, K, M, and O waves are footward or negative waves (see figure 1).

As will be noted from the composite sketch taken from Thompson and associates[13] (figure 2), there is a relationship of the ballistic complexes to physiologic events resulting from cardiac activity. The H wave occurs simultaneously with the fourth component of the first heart sound as registered by stethoscopic phonocardiograms. The I wave occurs at the end of the fourth component of the first heart sound. The J wave is usually related to the ascending slope of the

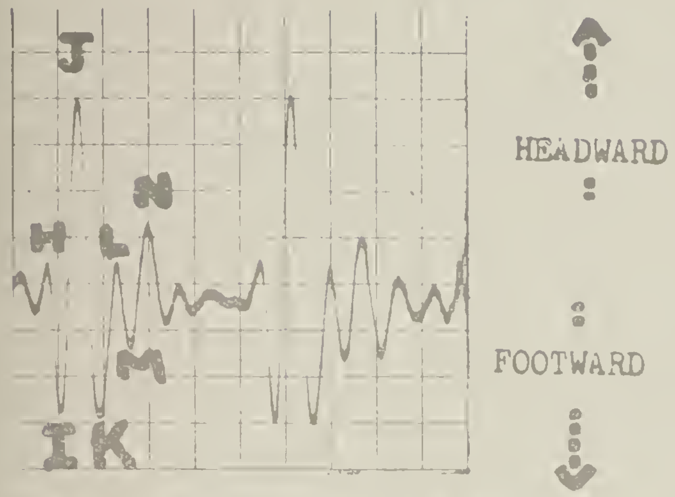

Figure 1. Normal Ballistocardiogram.

H WAVE: Reflects abrupt deceleration in flow returning to heart. Usually about one-fourth size of J peak

I WAVE: Acceleration of blood flow upwards in pulmonary artery and ascending arch of aorta resulting in footward recoil of body. Less than J peak; greater than H. Usually about one-half size of J peak.

J WAVE: Impact of blood mass on crown of pulmonary and aortic arches. Dominant wave of ballistocardiogram. Headward recoil of body. Two to three times the size of I wave.

K WAVE: Deceleration of blood flow in descending aorta.

L WAVE: L and subsequent diastolic waves represent return flow and filling of heart.

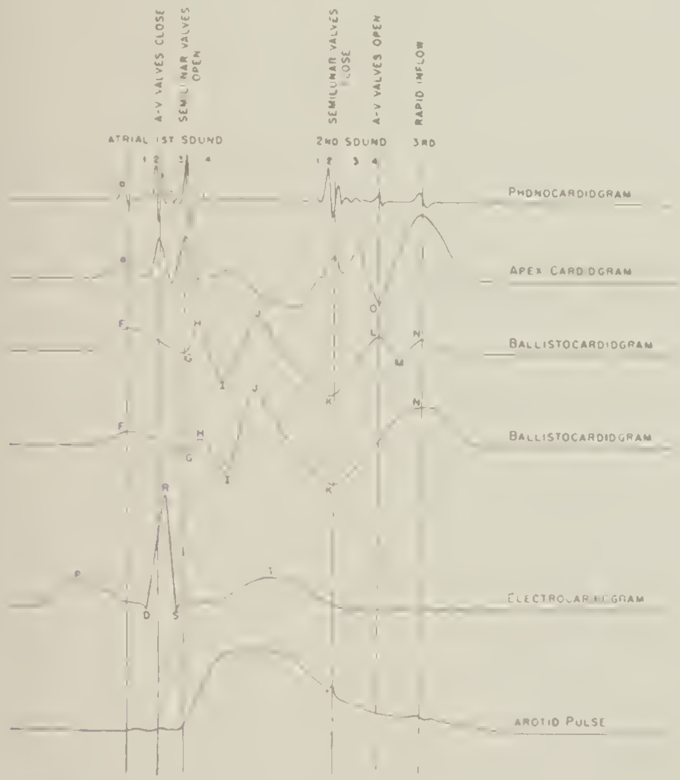

Figure 2.

Reproduced from Thompson, W. B., Rappaport, M. B., and Sprague, H. B.: "Ballistocardiography. II The Normal Ballistocardiogram." Circulation, 7. 321, 1953. Composite pictorial sketch showing relationship of ballistocardiograms, phonocardiogram, apex cardiogram, electrocardiogram and carotid pulse.

femoral pulse and roughly with the peak of the carotid and abdominal aortic pulsations. The K wave occurs with the second component of the second heart sound which is due to the closure of the semilunar valves and coincides with the descending slope of the femoral pulse and the dicrotic notch of the carotid pulse. L and M waves may normally be absent or small. The L wave coincides with the fourth component of the second heart sound which is the opening of the auriculoventricular valves. With respect to the electrocardiogram it will be noted that the H wave is in relation to the QRS complex and the K wave occurs shortly before the end of the inscription of the T wave. Normally, the H wave is small and is approximately one-fourth the size of the J peak and less than the I valley. In heart disease it may become large, equalling or surpassing the height of the J wave. Various interpretations of the origin of the H wave have been offered, namely, that it is due to: auricular contraction; apex thrust of the heart; it reflects forces associated with abrupt deceleration in the flow of blood returning to the heart.

The I wave represents the footward recoil of the body from acceleration of blood upwards in the pulmonary artery and ascending arch of the aorta. The I valley is less normally than the J peak, and usually greater than the H peak. Generally, it is about one-half the J peak. The J wave represents the headward recoil of the body produced by the impact of the blood mass on the crown of the two arches resulting in an abrupt reversal of the direction of forces, other contributory factors in its production are acceleration of blood flow in the descending aorta and deceleration of flow leaving the ventricles and in the ascending arches. The J wave is normally the dominant wave of the ballistocardiogram: its amplitude being two to three times that of the I wave. Abnormally, these waves are decreased in amplitude. They are related to ventricular ejection and have been employed in the calculation of cardiac output. The K wave begins at the peak of the J wave and extends in a relatively steep slope to a deep trough at a level of about or slightly beyond the depth of the I wave. It is due entirely to the systemic circulation, deceleration of blood flow in the descending aorta as it is slowed by the peripheral resistance and as ejection velocity falls off at the end of systole. A decrease in peripheral resistance decreases the amplitude of the K wave; an increase in peripheral resistance increases the amplitude i.e. in hypertension and arteriosclerosis of the aorta. The depth of the K wave is directly related to the length of the descending aorta. When the length of the latter is shortened, experimentally and clinically as in coarctation of the aorta[19],[20], the volume of blood undergoing deceleration in the descending aorta is reduced and the K wave decreases in amplitude and may even disappear. This also applies to intraluminal obstruction of the descending aorta[14]. The L wave is a relatively slow wave representing headward movement and begins at the trough of the K wave. This and subsequent diastolic waves have been ascribed to return flow to, and filling of, the heart[11], since in mitral valvular disease, constrictive pericarditis, heart failure, the Valsalva experiment, and arteriovenous aneurysm the L and ensuing waves may be of great amplitude.

WHAT IS MEANT BY RESPIRATORY VARIATION?

A profound influence is exerted by respiration on right ventricular filling and ejection; much less on left ventricular output. The negative intrathoracic pressure on inspiration increases the venous return to the right heart by a sucking action so that the output by the right ventricle is substantially increased while the left ventricle ejection remains relatively constant—the pulmonary vascular bed equilibrating the flow to the left ventricle[21]. This accounts for the increased amplitude of the complexes in inspiration as compared with those in expiration. Gubner[14] has likened the ballistocardiographic complexes during inspiration to a "dextro-ballistocardiogram"; those during expiration to a "levo-ballistrocardiogram." Abnormalities in the force of left ventricular ejection may be masked during inspiration and become revealed only on expiration when right ventricular ejection is reduced. When I and J waves are grossly abnormal in all phases of respiration, general impairment in the force of cardiac ejection is to be assumed—involving both the right and left ventricles.

GRADING OF BALLISTOCARDIOGRAMS

Grading of ballistocardiograms is strictly on an arbitrary basis. Starr and Maycock[22] employ the percentage of abnormal complexes present in a tracing, while a more popular system of classification is that of Brown and associates[2]:

GRADE O indicates normal pattern.

GRADE I represents tracings that show unusual decrease in amplitude of complexes in expiration often with loss of definitiveness.

GRADE II is designated when one-half or more of the complexes are abnormal, mainly in expiration.

GRADE III tracings show varying abnormalities in all phases of respiration along with low amplitude; the complexes still being individually identifiable.

GRADE IV represents chaotic, unidentifiable complexes of low amplitude.

WHAT IS THE CLINICAL APPLICATION OF THE BALLISTOCARDIOGRAM?

The ballistocardiograph has been employed in the study of a variety of clinical conditions, such as hypertension, hypertensive cardiovascular disease, congestive heart failure, mitral and aortic valvular disease, pericarditis, coarctation of the aorta, coronary artery disease, myocardial infarction, and angina pectoris. This list does not exhaust the entities studied by means of the ballistocardiograph. However, from a practical standpoint, as pointed out by Starr and Wood[23], with rare exceptions the variations from the normal pattern as manifested by individuals suffering from myocardial infarction and angina pectoris are the most marked to be found in clinical ballistocardiography. This has been borne out by other investigators. The Mandelbaums[24],[27] found 200 of 224 patients with clinical angina had abnormal resting ballistocardiograms. Moser and associates[25] found the ballistocardiogram to be abnormal in about 80 per cent of patients with previous myocardial infarction (three weeks to twelve years after acute episode); normal in about 20 per cent of the cases regardless of age. In patients with angina pectoris following a coronary occlusion a normal ballistocardiogram was found by these investigators to be infrequent (7 per cent); Taymor and associates[26] found the resting ballistocardiogram abnormal in 83 per cent of 75 patients with angina pectoris, normal resting electrocardiograms and positive Master's two step tests; after exercise the ballistoeardiogram became abnormal in an additional eight patients, making the ballistocardiogram abnormal in 93 per cent of these individuals. Brown[2] in a series of over 55 patients with myocardial infarction found no normal tracings.

The principal abnormalities seen in cases of myocardial infaretion and angina pectoris are[2],[25]:

1. Increased respiratory variation.
2. Irregular and indefinite pattern.
3. Decreased amplitude of the IJ segments.
4. Bizarre pattern with decreased amplitude of the IJ segments.

5. Notched J wave.
6. "Early M" pattern (prominent H and L waves, low I and J segments).

Although the ballistocardiogram is of help in the diagnosis of myocardial infarction, it is more useful in determining the status of the ventricular muscle after the infarction has occurred and in evaluating the amount of recovery[2]. Serial ballistocardiograms[25] have been employed in appraising the functional recovery of heart muscle following myocardial infarctions and have proved to be "reliable yardsticks" with respect to prognosis, especially in the presence of stabilized marked electrocardiographic abnormalities; those patients showing improvement in their patterns having a better prognosis than those showing progressive deterioration in their tracings. Not infrequently do we see patients who present the clinical picture of acute myocardial infarction and in whom no immediate physical, laboratory, or electrocardiographic evidence is found. It is in such patients that an abnormal ballistocardiogram is extremely valuable. The same applies to individuals presenting atypical clinical pictures of angina pectoris, especially those in the younger age groups. Although it is known that occasionally normal ballistocardiograms may be found in such cases, an abnormal tracing is higher significant, and vice versa. At this point, the question of the effect of aging on the ballistocardiogram, naturally, arises. At what age does the ballistocardiogram begin to become abnormal? Starr[29] has pointed out that "as the heart grows older it lifts the load more slowly." The ballistocardiographic changes due to aging are described depth of the I and height of the J waves with upward displacement of the I waves away from the base-line. Above the age of 45 over one-third of men may show abnormal patterns; above the age of 60 years abnormal tracings may be found in a majority of instances[30]. It is therefore apparent that ballistocardiograms should be interpreted cautiously and with "due consideration to the age of the subject[14]". Finding an abnormal ballistocardiogram in an individual under the age of 40 is highly significant; abnormal ballistocardiograms in older subjects may not be too meaningful, however, a normal pattern is helpful. To illustrate the importance of the ballistocardiogram in coronary artery disease and myocardial infarction, the following case is cited:

H. H., a 50-year-old white male, presented himself to the author for a cardiac evaluation July 21, 1953. In April of 1953 he experienced some left anterior chest pain which lasted several hours and then disappeared. He had been a known hypertensive (blood pressure reputed to have ranged between 180—190/110 for several years). He was told that he had suffered a myocardial infarction and was treated at home with bed rest. Since that episode he stated that he had been normotensive, a fact borne out by the finding of a blood pressure of 120—130/80 in both arms at the time this examination was made. He has remained free of chest pain since his initial episode and had no complaints referrable to his cardiovascular system. Physical and fluoroscopic examinations revealed no abnormalities. It will be noted that in his electrocardiogram (figure 3) there is only a tiny Q wave in standard limb lead 2; a definite, though tiny, R wave in lead 3; a significant Q wave in aVF. One would suspect, but could by no means be completely certain, that this man had suffered a previous infero-posterior myocardial infarction. However, the ballistocardiogram on this man was classic (figure 4). It will be noted that definite "early M" patterns are striking, thus confirming the diagnosis. Without the aid of a simultaneous electrocardiographic tracing it would be difficult to correctly identify the complexes. In all likelihood his electrocardiographic changes are stable; serial ballistocardiograms, thus offering a valuable means of observing the cardiac status. It is unlikely that improvement in his ballistocardiograms will occur. He has a fairly good functioning heart at the moment; rapid deterioration of his complexes would be highly significant so far as prognosis is concerned.

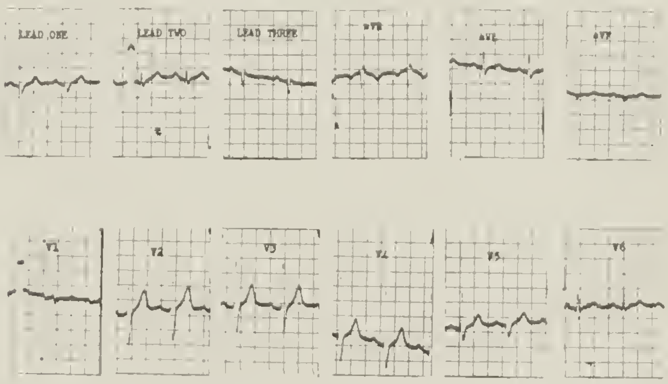

Figure 3. Electrocardiogram on 50-year-old white male with previous infero-posterior wall myocardial infarction. It will be noted that only a very small Q is present in lead 2; a tiny R is seen in lead 3; a Q is evident in lead aVF. Rather prominent R and T waves are present in leads V2 and V3.

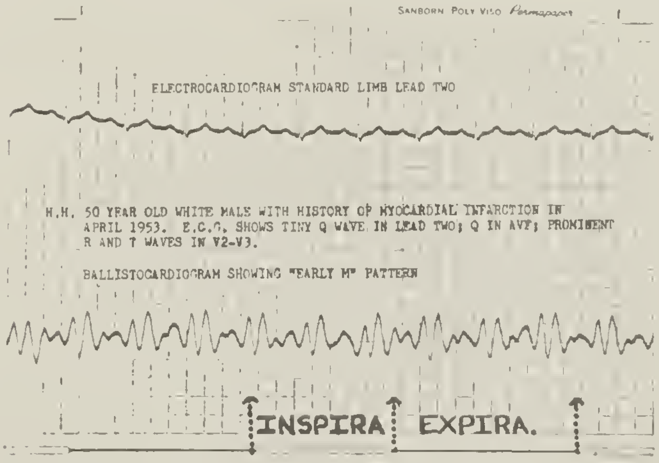
SANBORN POLY VISO Permapaper
ELECTROCARDIOGRAM STANDARD LIMB LEAD TWO
H.H. 50 YEAR OLD WHITE MALE WITH HISTORY OF MYOCARDIAL INFARCTION IN APRIL 1953. E.C.G. SHOWS TINY Q WAVE IN LEAD TWO; Q IN AVF; PROMINENT R AND T WAVES IN V2-V3.
BALLISTOCARDIOGRAM SHOWING "EARLY M" PATTERN
INSPIRA
EXPIRA.

Figure 4. Prominent H, low I and J waves constituting "early M" pattern seen in case of myocardial infarction. The simultaneously recorded electrocardiogram makes identification of the ballistic complexes more definite.

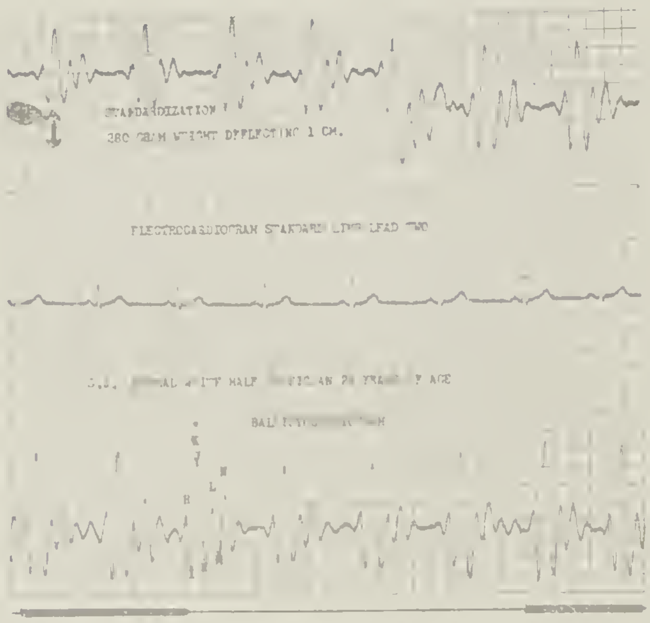
STANDARDIZATION
280 GRAM WEIGHT DEFLECTING 1 CM.
ELECTROCARDIOGRAM STANDARD LIMB LEAD TWO
BALLISTOCARDIOGRAM
K
J
M
L
H

Figure 5. Ballistocardiogram on a normal white male physician, aged 28 years. Note the normal respiratory variation and relationship of the ballistic complexes to the simultaneously recorded electrocardiogram.

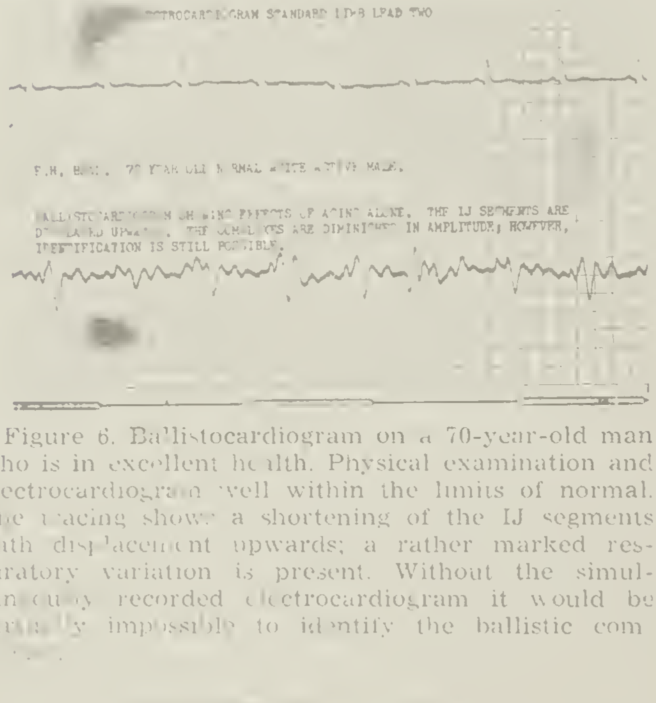
ELECTROCARDIOGRAM STANDARD LIMB LEAD TWO
70 YEAR OLD NORMAL WHITE ACTIVE MALE.
THE IJ SEGMENTS ARE
IN AMPLITUDE; HOWEVER,
IDENTIFICATION IS STILL POSSIBLE.

Figure 6. Ballistocardiogram on a 70-year-old man who is in excellent health. Physical examination and electrocardiogram well within the limits of normal. The tracing shows a shortening of the IJ segments with displacement upwards; a rather marked respiratory variation is present. Without the simultaneously recorded electrocardiogram it would be virtually impossible to identify the ballistic complexes.

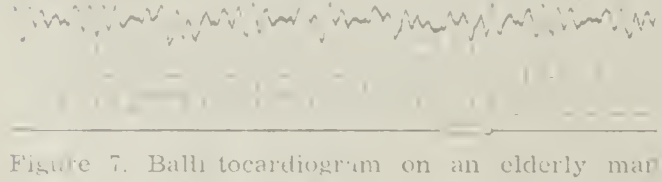
ELECTROCARDIOGRAM STANDARD LIMB LEAD ONE
YEAR OLD WHITE MALE
AND CORONARY ARTERY DISEASE.
IN AMPLITUDE AND BIZZARRE-SHAPED. THE

Figure 7. Ballistocardiogram on an elderly man demonstrating small, irregular, unidentifiable complexes constituting a chaotic pattern and reflecting the effects of aging and coronary artery disease on the heart

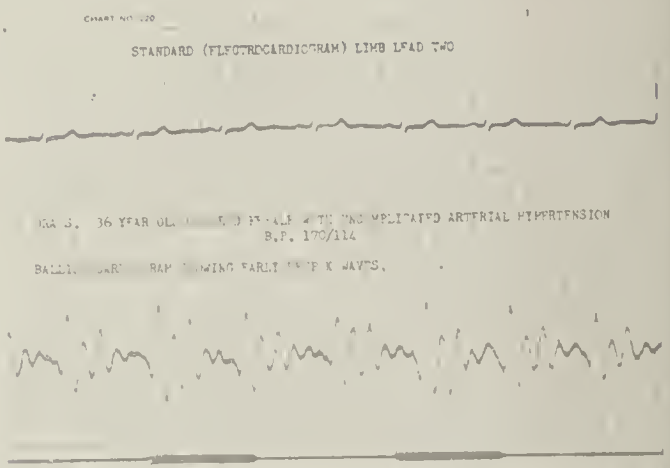
CHART NO. 220
STANDARD (ELECTROCARDIOGRAM) LIMB LEAD TWO
36 YEAR OLD
ARTERIAL HYPERTENSION
B.P. 170/114
K WAVES.

Figure 8. A case of uncomplicated systemic arterial hypertension demonstrating merely deep K waves seen in such instances and probably reflecting increased peripheral resistance.

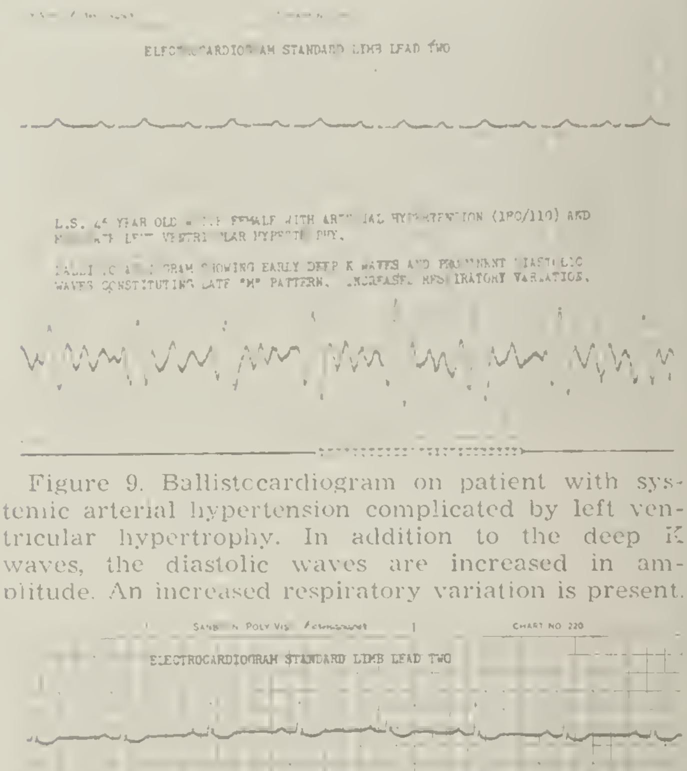
ELECTROCARDIOGRAM STANDARD LIMB LEAD TWO
L.S. YEAR OLD FEMALE WITH ARTERIAL HYPERTENSION (180/110) AND
LEFT VENTRICULAR HYPERTROPHY.
SHOWING EARLY DEEP K WAVES AND PROMINENT DIASTOLIC
WAVES CONSTITUTING LATE "M" PATTERN. INCREASED RESPIRATORY VARIATION.

Figure 9. Ballistocardiogram on patient with systemic arterial hypertension complicated by left ventricular hypertrophy. In addition to the deep K waves, the diastolic waves are increased in amplitude. An increased respiratory variation is present.

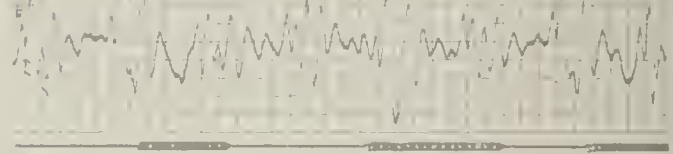
SANBORN POLY VISO
CHART NO. 220
ELECTROCARDIOGRAM STANDARD LIMB LEAD TWO
J.C.H. 49 YEAR OLD COLORED MALE LABORER WITH ARTERIAL HYPERTENSION (220/100),
AORTIC REGURGITATION (LUETIC) AND CONGESTIVE HEART FAILURE. ON DIGITALIS.
BALLISTOCARDIOGRAM SHOWING DEEP, BROAD, NOTCHED K WAVES; LARGE DIASTOLIC WAVES.

Figure 10. Ballistocardiogram on individual with systemic arterial hypertension, luetic aortic regurgitation and congestive heart failure. The tracing is grossly abnormal in that deep, broad notched K waves are present (described by Gubner); very tall diastolic waves; shortened and upward-displaced IJ segments are seen. A marked respiratory variation is present.

MISCELLANEOUS CONDITIONS

Figures 5-10 illustrate some other interesting applications of ballistocardiography encountered in the office practice of cardiology, namely, the effects of: aging alone (figure 6), aging and coronary artery disease (figure 7), uncomplicated arterial systemic hypertension (figure 8), systemic arterial hypertension complicated by left ventricular hypertrophy (figure 3), systemic arterial hypertension complicated by syphilitic aortic regurgitation and congestive heart failure (figure 10) and rheumatic heart disease, mitral stenosis auricular fibrillation and systemic arterial hypertension (figure 11).

SUMMARY AND CONCLUSIONS

A brief description has been presented of ballistocardiography, the complexes thereof, and their relationship to certain physiologic events. The advantages of an instrument capable of being standardized and combined with a two-channel recorder for proper identification of the ballistic complexes by their relationship to phonocardiograms or electrocardiograms have been emphasized. The practical application of this method of study has been stressed, namely, in prognosis after myocardial infarctions; detection of coronary artery disease when other methods have failed or proved to be equivocal. Its value in a group of miscellaneous cardiovascular diseases has been mentioned. It is to be further emphasized that ballistocardiography does not replace electrocardiography; it represents mechanical events and is related to the efficiency of heart action as a pump, it is an extremely valuable tool in complete cardiovascular system studies.

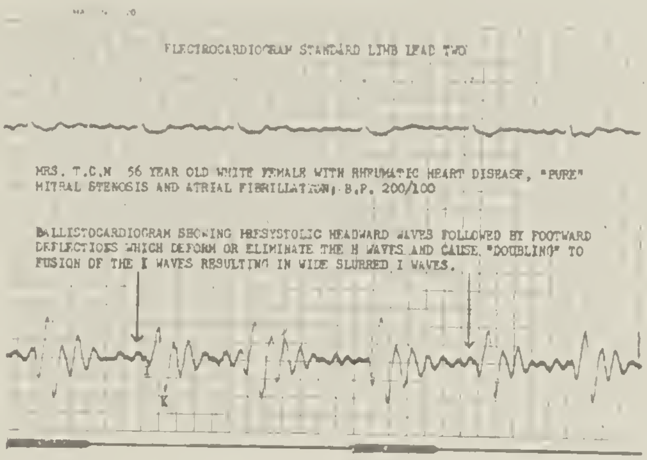
ELECTROCARDIOGRAM STANDARD LIMB LEAD TWO
MRS. T.C.M 56 YEAR OLD WHITE FEMALE WITH RHEUMATIC HEART DISEASE, "PURE" MITRAL STENOSIS AND ATRIAL FIBRILLATION; B.P. 200/100
BALLISTOCARDIOGRAM SHOWING PRESYSTOLIC HEADWARD WAVES FOLLOWED BY FOOTWARD DEFLECTIONS WHICH DEFORM OR ELIMINATE THE H WAVES AND CAUSE "DOUBLING" TO FUSION OF THE I WAVES RESULTING IN WIDE SLURRED I WAVES.
K

Figure 11. Ballistocardiogram on case of rheumatic heart disease, mitral stenosis, atrial fibrillation and systemic arterial hypertension. Arrows point to presystolic headward waves followed by "doubled" to fused I waves. Large diastolic waves are present

(Bibliography available with reprints)

Presenting in the pages that follow:

BOOK SECTION

INSTALLMENT 7

Atlas of Rush Pin Technics

LESLIE V. RUSH, M.D.
Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

This is the seventh of a series of monthly installments to be published in *The Mississippi Doctor* during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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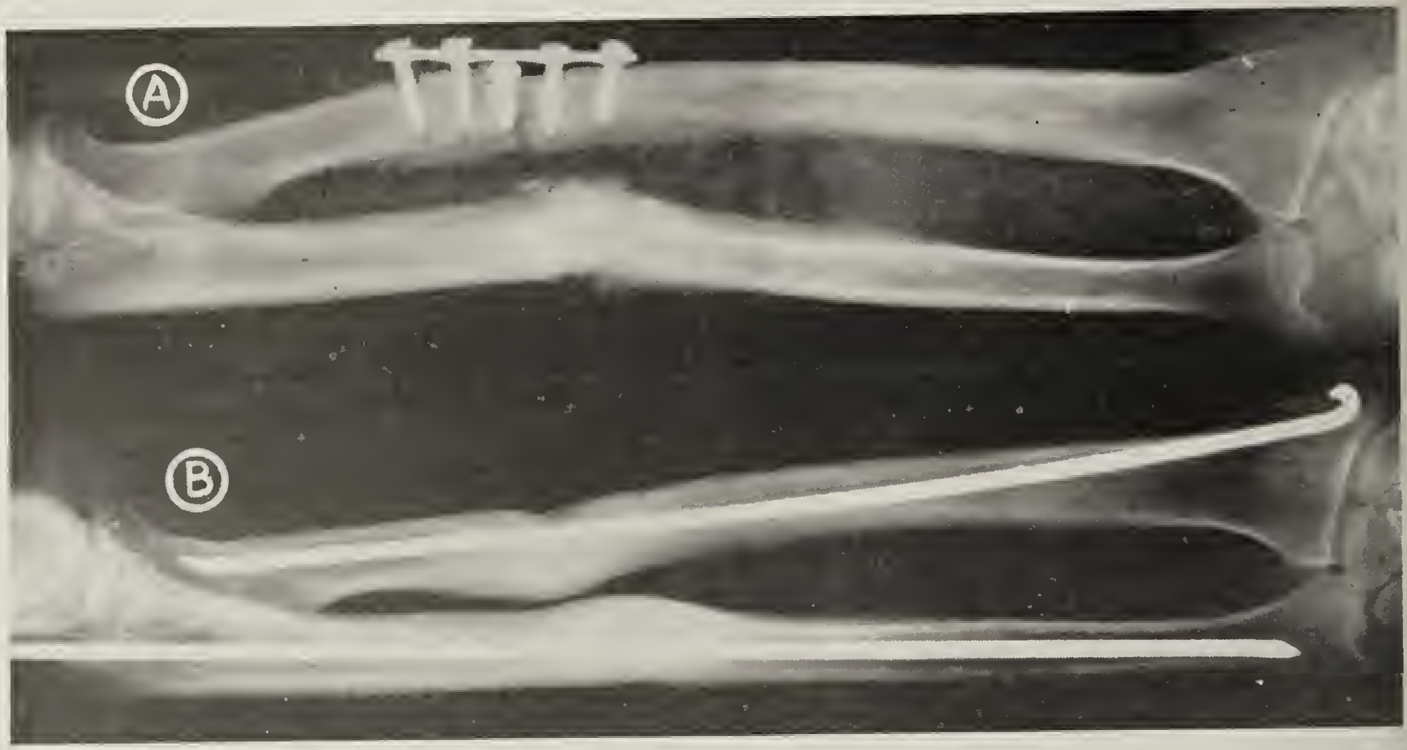


(A) *Fracture radius and ulna. Plate and screw fixation (elsewhere), immobilized in plaster 5 months. Poor healing, marked rocking at the fracture site. (Male, age 25).*

(B) *Same case 3 months later. At fifth month plate and screws were removed. Blind pinning was done without disturbing bone ends. Full function was begun with no external splinting.*

15

DELAYED HEALING AND NON-UNION

With the judicious application of medullary pins excellent bone healing can generally be expected. The presence of the pin itself within the bone substance appears neither to stimulate nor retard bone healing. But by the utilization of the possible dynamic forces the encouraging factors can be brought into play and the healing of the bone both assured and expedited.

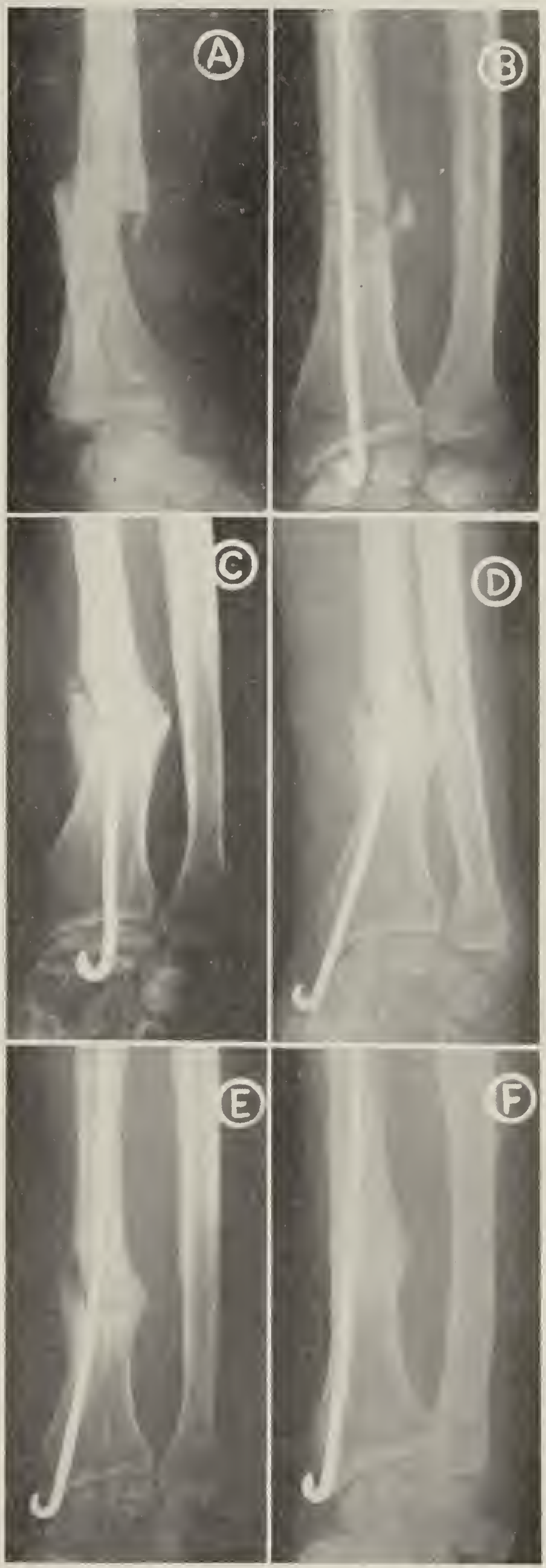
If fresh fractures are treated from their incipiency with minimal trauma and are stably transfixed in such fashion as to secure good bone contact with compression, and without motion at the fracture site, healing problems will be rare indeed.

In cases of delayed healing osteogenesis can frequently be stimulated by proper application of a pin alone. Better immobilization of the bone with contact compression and immediate return of the extremity to function provide the stimulus to set healing on its way.

Bone grafts are infrequently needed in routine fracture treatment. But with the pin already in place for internal splinting, grafting becomes a much simplified procedure and should be used promptly when it becomes apparent that the healing process is attempting to reverse itself to produce nonunion.

Internal fixation can prevent union by holding bone ends apart or by excessive trauma to bone ends or surrounding soft tissue.

Distraction from Angulation



(A) Fracture lower third radius, 7 weeks duration. (Male, age 45).

(B) Immediately after open reduction and pinning. Observe that there is excellent alignment and bone contact. The pin was introduced from a wrong point of insertion and the head was not driven deeply enough.

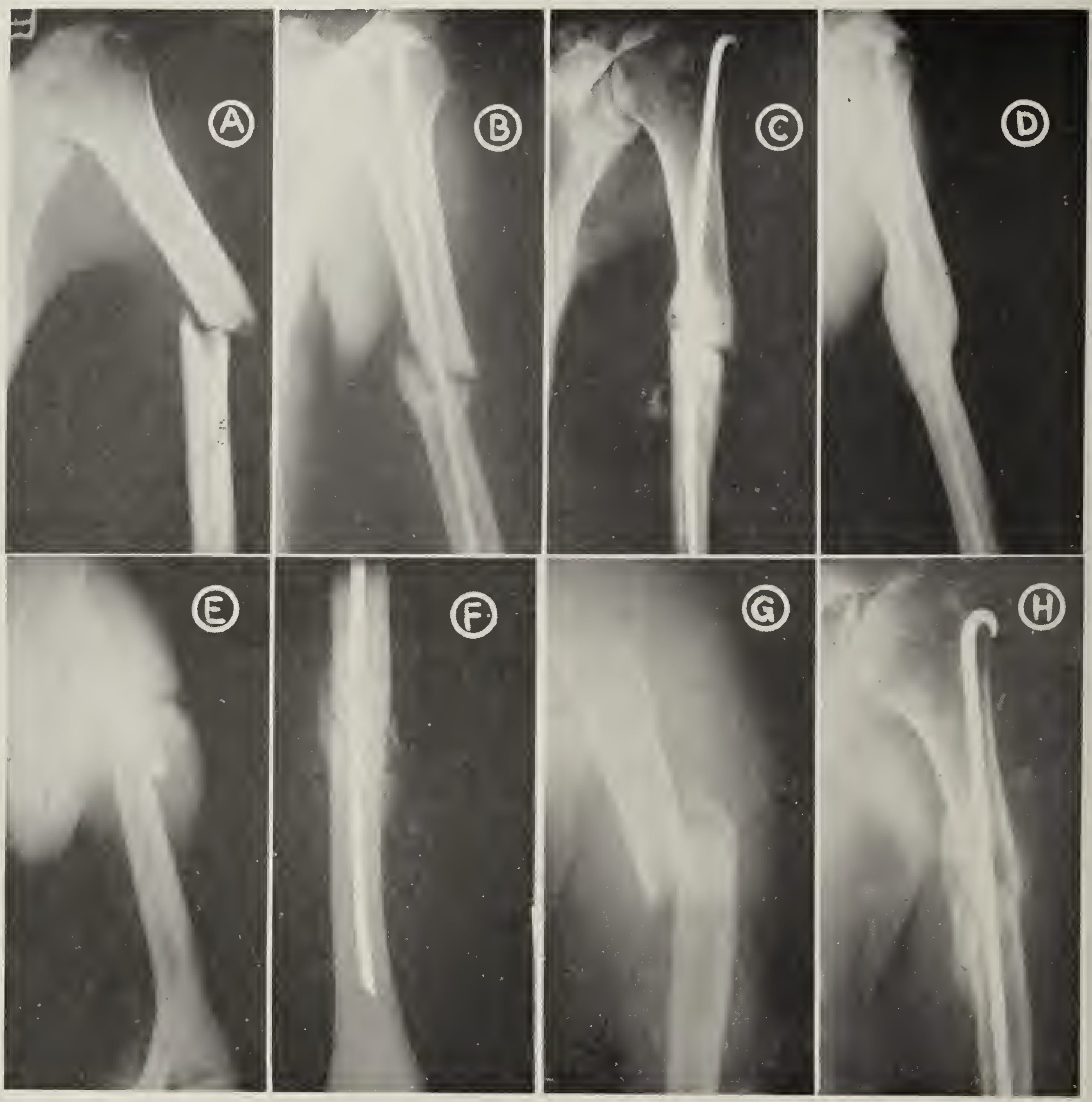
(C) At 8 months there is non-union with marked medial angulation. The angulation was produced by the pull of the pronator quadratus and because the pin entered the distal fragment improperly. The pin should have been introduced through the styloid. The healing process was reversed when the angulation occurred, this allowing distraction because the bone ends were held apart by the intact ulna.

(D) At 8 months (in surgery). The original pin has been removed. As a closed procedure, a new pin has been introduced through the styloid of the radius and driven across the fracture site. It was guided across the fracture cleft by rotating it with a pair of pliers. Note how the straight pin has been forced into a curve by the angulation of the bone. Because of its resilience, the pin will continuously try to return to its original straight alignment within the bone. In this picture the pin has not been driven completely home.

(E) Three weeks after the second pinning. The pin is now almost straight. The angulation of the radius is corrected. Observe that contact-compression is now evident on the medial aspect of the fracture and the fracture line is fading in this area.

(F) Seven weeks after second pinning. Healing is complete. The fracture line can no longer be demonstrated.

Angulation of a single bone in the forearm can produce distraction and non-union. Angulation of the tibia can produce non-union if the fibula is intact.



Humerus: Influence of Deltoid Insertion

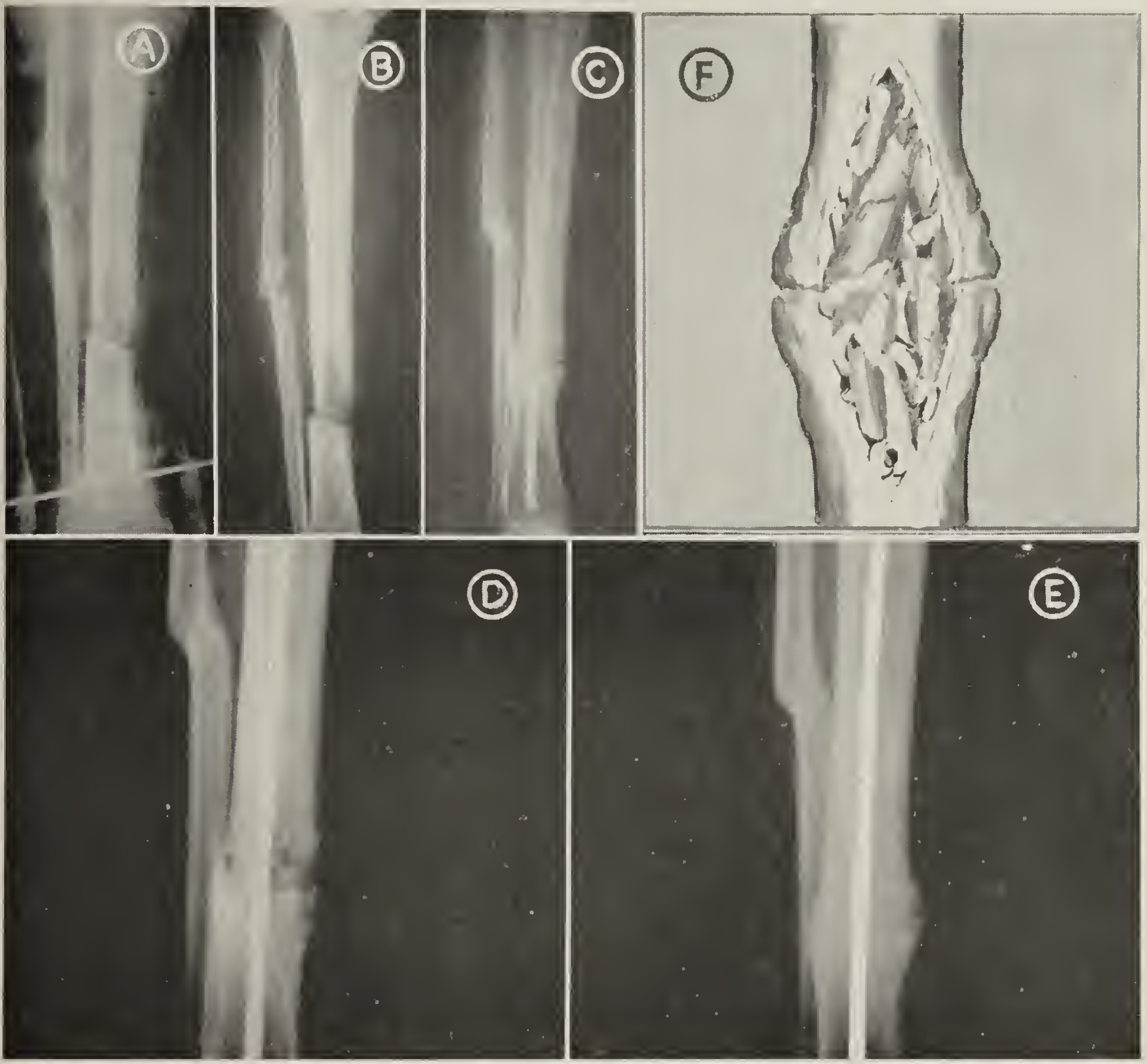
(A--D) Oblique fracture below deltoid insertion. Note lateral pull on upper fragment (A). Shear force produced distraction and permitted rotary motion with impending non-union at 8 months (B). Barrel stave iliac grafts (C) applied at 8 months without disturbing bone ends. Fracture line gone (D) 9 months later. (Male, age 32).

(E--F) Similar fracture to (A) which healed very rapidly. Healing shown above (F) at 6 weeks. Stable fixation with good bone compression because medullary cavity was small, and slightly curved pin was used. (Male, age 28).

(G--H) Fracture above deltoid insertion healed securely at 6 weeks. Good fixation and strong compression at this level. (Female, age 67).

All the above cases were permitted full function throughout entire treatment.

Fractures above the deltoid insertion heal well. Fractures immediately below the insertion are usually oblique and prone to distraction.



Tibia: Distraction, Chip Bone Graft

(A) Compound fracture treated elsewhere by fixed traction in long leg cast. Excellent reduction. (male, age 23).

(B) Gradual distraction from absorption of bone ends. Closed pinning and walking cast at 10 weeks.

(C) At 11 months fracture line still present.

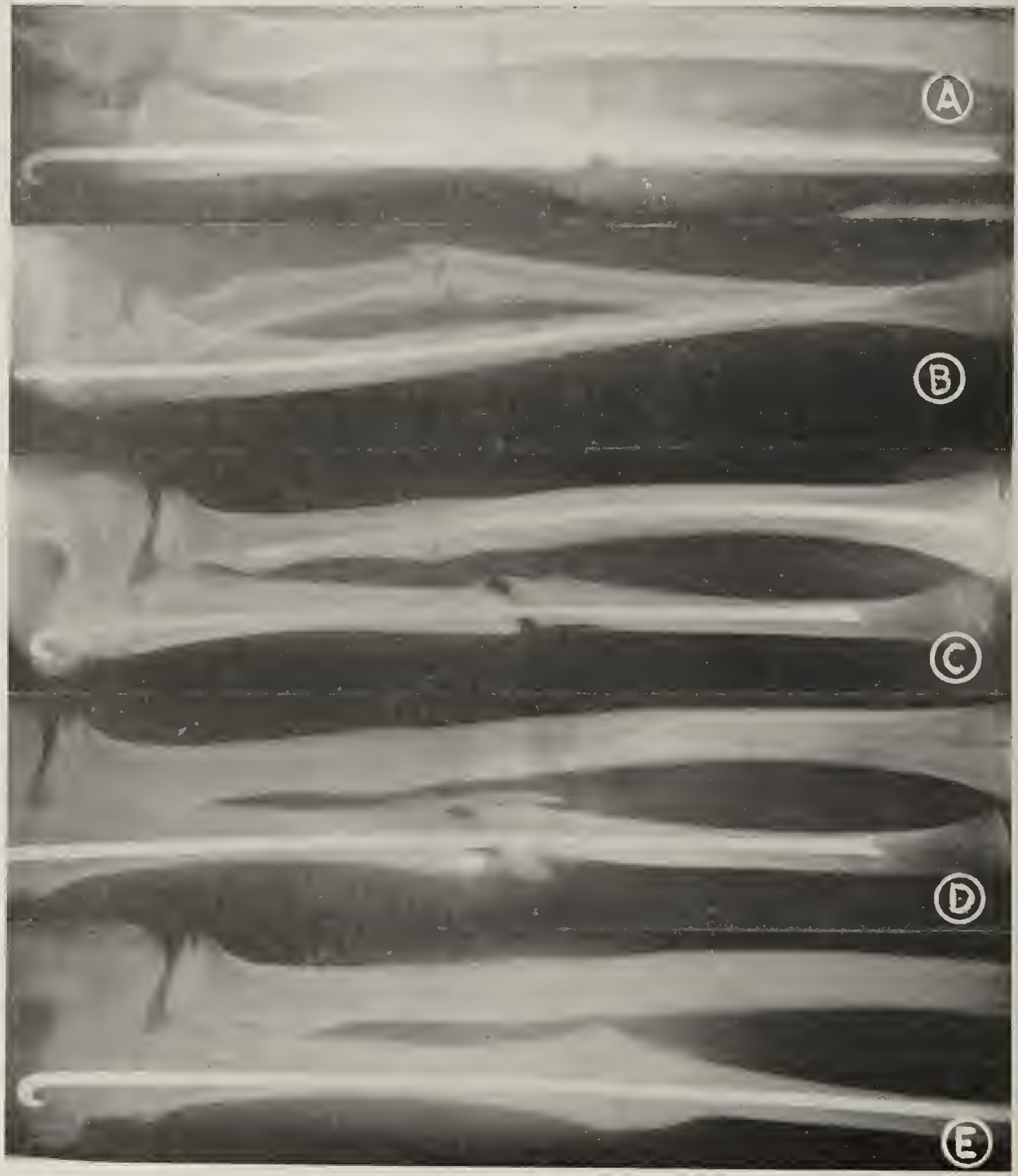
(D) Chip bone graft. No external fixation. Partial weight bearing after one month.

(E) Good healing five months after chip graft. Fracture line is gone.

(F) Technic chip graft tibia: Expose anterior surface of bone subperiosteally through curvlinear incision. Do not disturb fracture. With chisel or osteotome saucerize anterior portion of bone. Save bone chips. Open both medullary canals. Pack chips in bone cavity and close wound.

If medullary pin is not already present in the bone, it should be inserted as a closed procedure, if possible, prior to grafting.

It is difficult to secure compression of the tibia once the fibula has healed. Chip bone graft has many advantages over osteotomy of the fibula and should be done promptly if there is evidence of non-union.



Distraction vs. Compression

(A) Semi-open reduction radius and ulna. Only the ulna pinned. Plaster fixation. Note slight distraction of ulna. (Male, age 16).

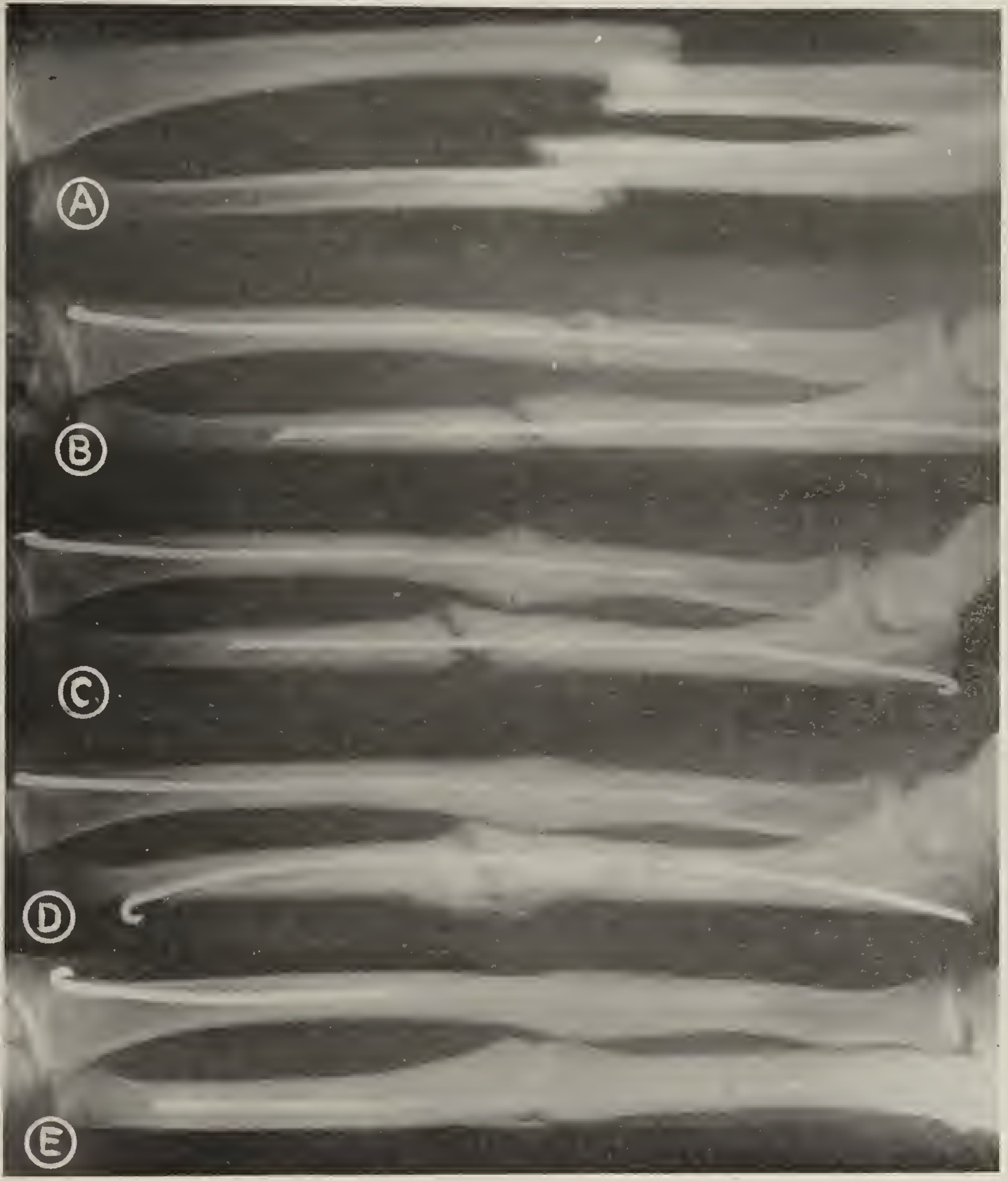
(B) At 2 months radius has angulated permitting compression and good healing in ulna, poor healing radius.

(C) Angulation of radius corrected by closed pinning. At 7 months radius healed, ulna unhealed with wide distraction. The healing process has been reversed in the two bones.

(D) Barrel stave grafts from ilium applied subperiosteally without disturbing fibrous union. No splints.

(E) Solid union 3 months after grafting ulna.

If there is inequality of length of the bones of the forearm, healing will be good in the compressed bone and poor in the distracted one. In persistent distraction graft early.



Rotary Stress plus Distraction

(A) Fresh fracture radius and ulna. (Male, age 17).

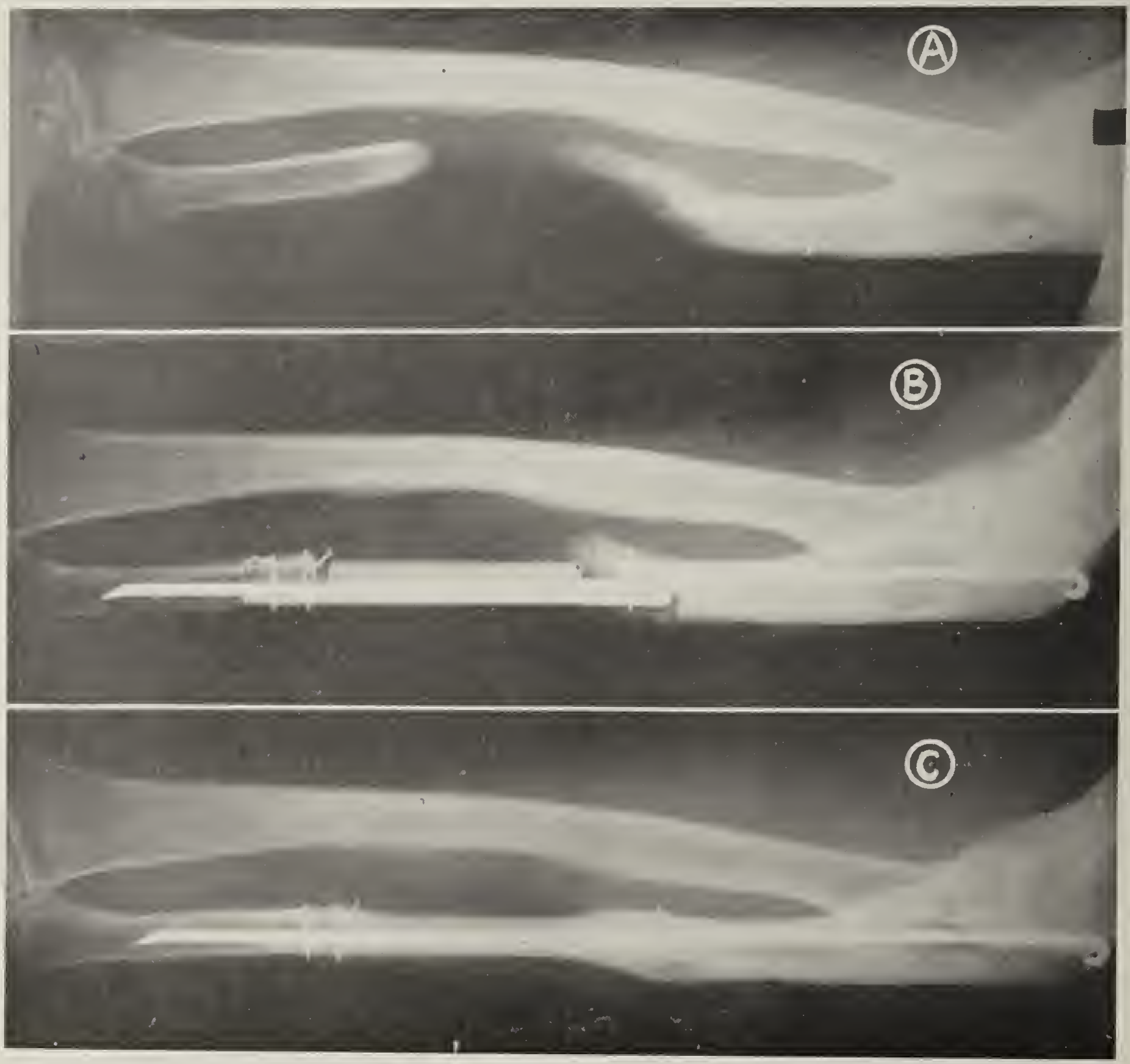
(B) Six weeks after pinning. The pins are too short. Ulna pin has poor purchase on distal fragment. Note slight distraction.

(C) At 5 months. Radius healing, ulna ununited. Note poor fixation distal fragment of ulna permitting rotary stress and rocking. Absorption of bone about the pin with compensatory peripheral bone proliferation is due to motion of pin in the bone.

(D) Ulna repinned with longer curved one driven upward from side of bone below. Fixation now completely stable. Iliac barrel stave grafts applied without disturbing fracture. Full function permitted.

(E) Firm union 4 months after repinning and grafting ulna.

The lower half of the ulna is not stably fixed by a pin driven distally from the olecranon and tends to distract. The pin is best introduced from the side of the bone near the styloid and driven upward. This provides three-point pressure in each fragment to control torque.



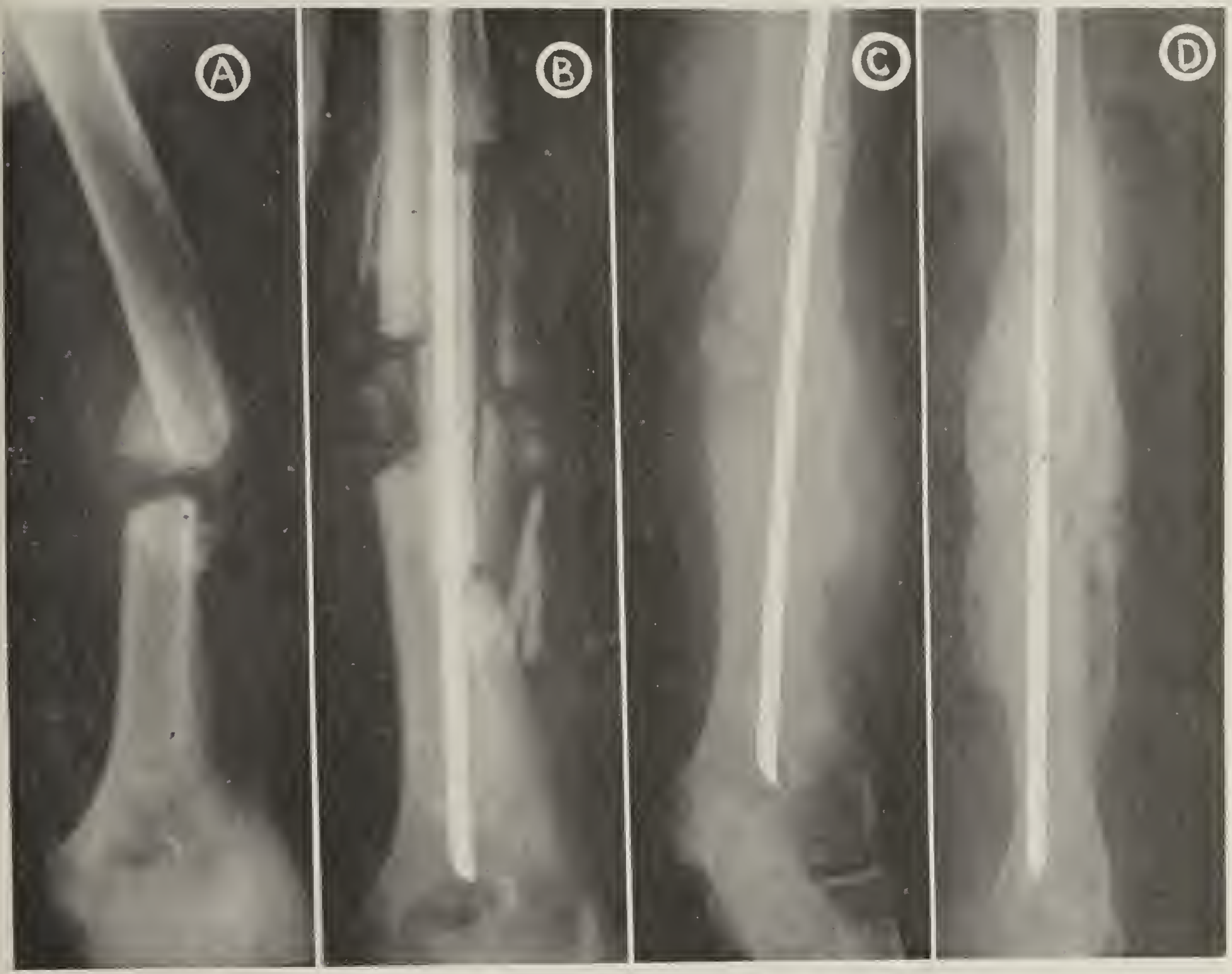
Tube Graft for Bone Defect*

(A) Defect of ulna resulting from old compound fracture. Loss of bone substance for a distance of four inches. (Male, age 23).

(B) After bridging with tube graft from the mid-fibula. Ends of bone fragments and graft step-cut, fitted into position and transfixed with intramedullary pin one-eighth inch in diameter. Circular wires for security. No external immobilization and full function permitted after two weeks.

(C) Complete healing at one year. Ends of graft had fused with shaft at three months.

*Rush, L. V., and Rush, H. L., *The Technic of Longitudinal Pin Fixation of Fractures of the Forearm, Mississippi Doctor, Nov.* 1949, *pp.* 284-288.



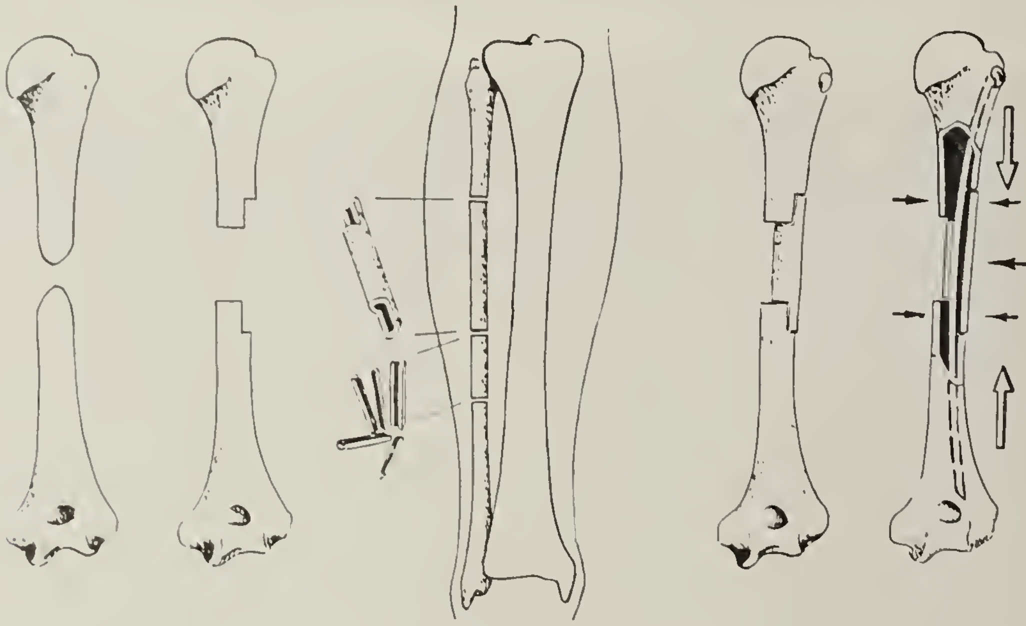
Tube Graft for Humerus

(A) Non-union shaft of humerus with wide separation of fragments from bone absorption. Duration 9 months. (Male, age 46).

(B) Immediately after application of tube graft from mid-fibula. Ends of bone fragments and graft step-cut. Graft fitted in under pressure as a key and transfixed by intramedullary pin three-sixteenths inch in diameter. This pin passed through graft without difficulty. Chip grafts placed about periphery. No external immobilization and full function permitted.

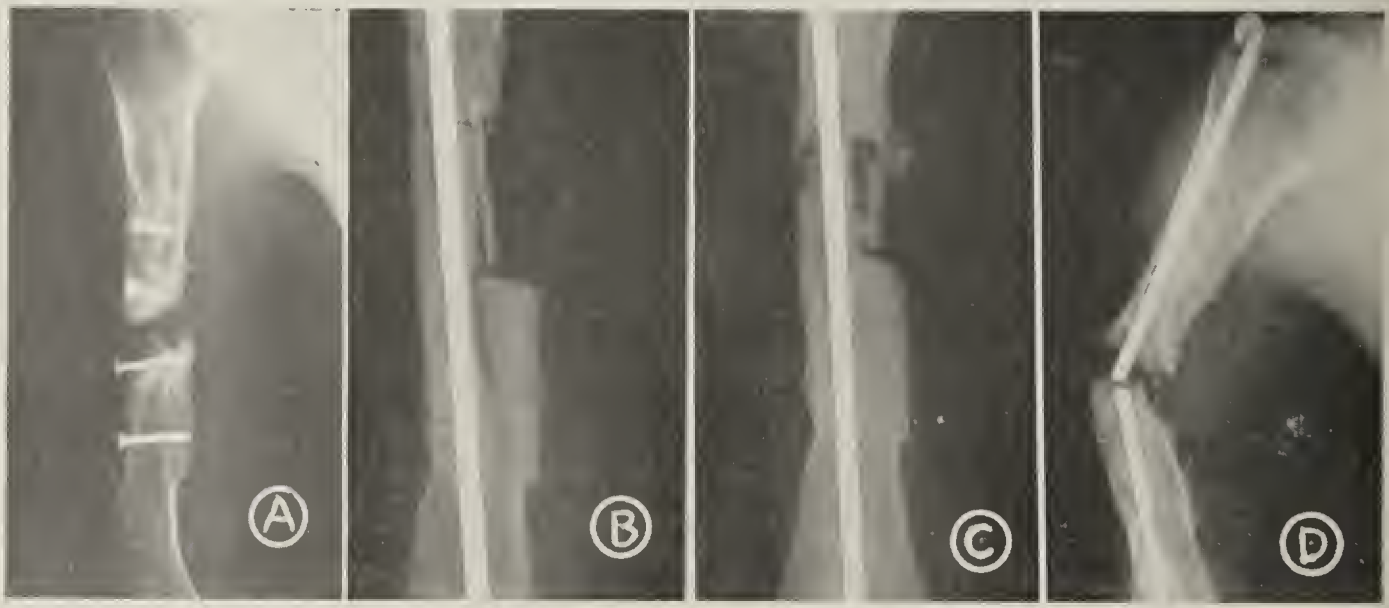
(C) & (D) Healing at 5 months. This patient suffered a temporary wrist drop which recovered in two months.

Non-union of the humerus is not always so easily dealt with. The problem is difficulty of immobilization. Once periarticular adhesions of the shoulder develop and the bone becomes osteoporotic, the problem is intensified. Tendency to rotary stress, rocking, and distraction can produce graft failure.



Technic, Fibula Tube Graft

When the graft is fitted under pressure, bone compression is exerted both vertically and horizontally as shown by arrows.



"Love's Labor Lost"

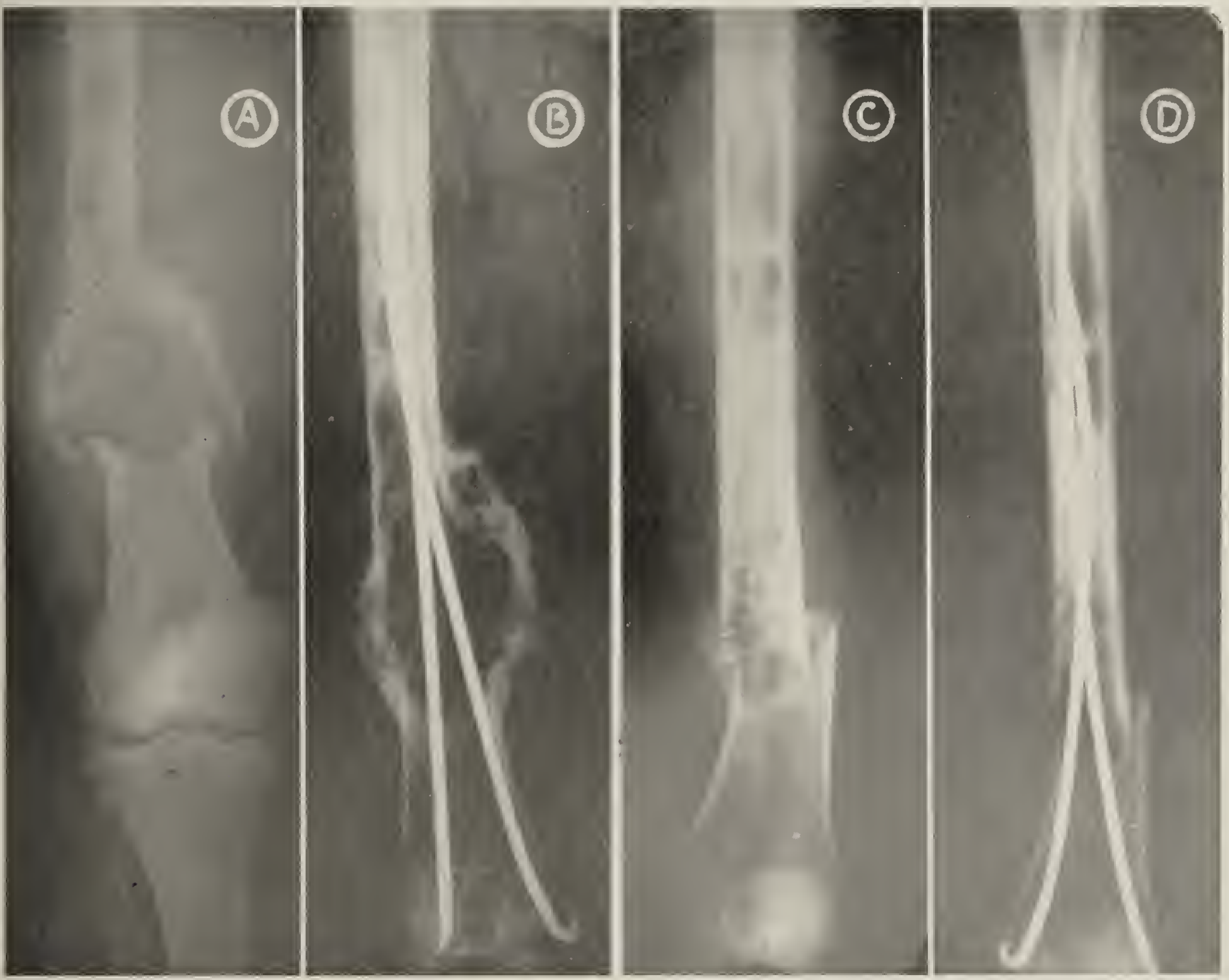
This disastrous result might have been avoided by more efficient external immobilization. In (C) note that rarefaction of the bridge is occurring although the ends of the graft are fused. The graft apparently fractured from rotary stress because of periarticular adhesions at the shoulder. The pin gave poor fixation of proximal and distal fragments because of osteoporosis from prolonged non-use.

Once absorption of the bridge began the deltoid got into the act to produce repeated angulation or rocking at the fracture site (D).

Fracture of the pin occurred after twenty months because patient was reluctant to have pin replaced. Fracture of the pin is to be expected in persistent non-union.

Prior to treatment here this patient had been subjected elsewhere to prolonged immobilization in plaster following necessity of soft tissue repair, step-cut operation on humerus, and later dual bone graft. He will, of course, have to have a subsequent graft. (Male, age 34).

Technic sketch from Rush, L. V., Dynamic Factors in Medullary Pinning of Fractures, American Surgeon, Sept. 1951, *Vol. XVII, No.* 9, 803-808.



Fracture of the femoral shaft, bilateral, in far advanced case of multiple myeloma. Patient secured enormous comfort from bilateral closed pinning.

17

SPECIAL INDICATIONS

Pathological Fractures

The above case is that of a Negro woman who was almost moribund from secondary anemia and generalized bone involvement from multiple myeloma. Repeated transfusions permitted her to successfully undergo closed pinning operations upon both thighs.

Although it could not even be hoped that this case could again become ambulatory, she did receive an immense amount of comfort from her pinning which permitted her to be out of bed. Six months after operation the right femur was fairly well healed, but the left femur showed further bone destruction.

Pathological fractures we now believe to be a definite indication for medullary pinning. When possible it should be carried out as a closed procedure.

The field of usefulness of medullary pinning is now much broader than formerly believed. As new technics are developed the general indications should be markedly broadened.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

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MILDRED P. ANDERSON — Assistant Editor
David E. Guyton, Blue Mountain College — Poet

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

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EDITORIALS

SALAAM TO VICKSBURG DOCTORS

Physicians of Vicksburg wrote a warm and memorable chapter in that city's book of sorrows following the recent devastating tornado, which left many dead and over two hundred injured.

The 40-odd doctors, members of the Issaquena-Sharkey-Warren Counties Medical Society, voted unanimously to give without charge all professional services rendered after the tragic storm.

Their action was all the more meaningful since the Mississippi legislature immediately voted $100,000 emergency relief, the National Guard expended $75,000, President Eisenhower telephoned from Bermuda and authorized Civil Defense emergency funds, and the Red Cross supplied funds and people.

The city's four hospitals, with a total bed capacity of slightly more than 400, were not damaged. With about 250 injured persons requiring hospital treatment almost immediately following the storm, and in the face of tremendously adverse conditions, since both electric power and natural gas services were interrupted, the physicians and hospitals rendered outstanding and praiseworthy service.

VACCINE FOR POLIO

Hope springs eternal in the breast of man. Recently hope has been greatly activated in the hearts of the mothers of the land by the outlook for conquering the dreaded disease of polio. A vaccine developed under the leadership of Dr. Jonas E. Salk of the University of Pittsburgh will soon be put to test to see if it will really prevent the disease. Vaccinations will start during the week of February 8, 1954, and will be completed by June 1, 1954. More than two hundred counties in the United States have been selected. The study will get under way in one or more counties in the South. As many as 25 counties may be under test at the same time.

With one-half to one million scheduled to receive the vaccine, this year will make history in the fight on polio, no doubt. Every person in the nation stands taut with interest.

CONSTRUCTION PROGRESSING

Construction on the four-year medical school in Jackson is going along satisfactorily, and it is hoped that Mississippi will have its four-year school in action by January, 1955, or sooner. With its affiliated system of hospitals our state has or will have when completed, the best set-up in the nation for training general practitioners and public health officers. Our state can also offer an unequaled system for training registered nurses in a three-year course.

Medical service in our state is on the up and up and we believe that the efficiency standard will be raised steadily—but only with continued thought, effort, good will and financial support. The medical profession should be active and alert and cultivate cooperative understanding from the general public.

COURSE IN CARDIOLOGY

The Mississippi Heart Association will give a short review course in cardiology at the University of Mississippi School of Medicine the second week in February. Dr. Arthur C. Guyton, chairman of the Professional Education Committee for the Heart Association, is hopeful that this will be a most valuable course, helpful to any doctor, especially to those interested in heart disease. You may depend upon this course being first class. We venture that meetings like the one to be held in Oxford are only the beginning of fine educational courses in our state. Make your plans to attend if possible.

WITH THE HELP OF EXHIBITORS

Recently a doctor of fine judgment observed that the Mid-South Postgraduate Assembly secures very able men on its programs "which might be due in part to the policy this assembly employs in paying the expenses of the essayist." We are sure this is a correct observation. The Mid-South secures topflight men, and for many years has been able to pay their expenses, made possible in a large measure by the fine support and cooperation of the exhibitors. It is hard to find enough space for the exhibitors at the Mid-South. Dr. Gilbert Levy has been in charge of the exhibits for more than twenty-five years. His continuous and efficient service has been a fine asset to the Mid-South. The exhibitors pay a large portion of the income of the assembly.

Exhibitors as a rule have vision and endeavor to speak the profession's language for service. The biological houses have been a backlog of strength to the medical profession and in turn have rendered fine service to the people by their aid in research. Cordial cooperation between the medical profession and the exhibitors can only promote good to all concerned.

ALCOHOL STUDY

Reports from the Conference on Alcohol Study held at the University of Mississippi indicate that it was a fine success. The problem of psychotherapy, medical treatment, the hospital problem and the nursing problem for alcoholics were all ably discussed. Alcoholics Anonymous was endorsed for its work. The general conclusion seemed to be that prevention was of the most importance. We are sure this is correct.

We wish to commend Dean Pankratz for his leadership in a study so important to the medical profession and to the nation. By honest study, reason, and conscientious action we will find better approaches to control of this problem.

The February issue of the *Mississippi Doctor* will be designated the Memphis Issue. The Memphis doctors do not participate in the program of the Mid-South, and it seems entirely fitting that they be invited to submit papers for this issue of the journal. Some of the ablest doctors in the nation are in the capital of the mid-South, Memphis. They are strong supporters of this medical assembly, which has met at the Peabody for sixty-four years.

WEST POINT OPENS NEW HOSPITAL

On December 18 West Point celebrated the completion of a fine new hospital. We wish to congratulate this fine city and the doctors of the county on this facility. West Point has a splendid staff of doctors and this new hospital will be a great asset to their efficiency for service to the people. Hill-Burton and state funds were used in the construction of this hospital.

SOUTHEASTERN SURGICAL CONGRESS

The Twenty-Second Annual Assembly of the Southeastern Surgical Congress will hold its session March 8, 9, 10, 11, 1954, in Birmingham, Ala. Headquarters will be at the Dinkler-Tutwiler Hotel. A wonderful scientific program has been arranged.

This is one of our finest surgical organizations, and Birmingham is well located for the meeting. Write for your reservations now.

NORTHEAST MEDICAL SOCIETY

The Northeast Mississippi Medical Society held its fourth quarterly session at Tupelo on December 8. It was quite well attended. Drs. E. D. Parker of Amory and Ross B. Love of Tupelo were local essayists. Dr. James N. Etteldorf, Memphis, guest essayist, discussed "Rheumatic Fever in Children."

Dr. H. H. McClanahan, Jr., was re-elected secretary and Dr. W. W. Strange of Booneville was elected president to succeed Dr. J. L. Guyton of Pontotoc, who had served as president the last year.

Our delegates to the American Medical Association were right on the job in St. Louis, Drs. J. P. Culpepper and John B. Lucas. They seem to be keeping to the front in medical affairs.

NEWS AND COMMENT

DR. E. H. CARY

American medicine lost a dynamic personality in the passing of Dr. Edward H. Cary, 81, in Dallas on December 10. President of the A.M.A. in 1932-33 and a member of the Board of Trustees from 1925-29, Dr. Cary contributed his mature judgment in the House of Delegates as late as 1951.

While serving as president-elect and president of the A.M.A., Dr. Cary traveled far and wide in behalf of medicine's fight against socialized medicine. As chairman of the executive board of the old National Physicians' Committee, he was one of the pioneers in that battle.

PHYSICIAN OF THE YEAR

Dr. Joseph I. Greenwell of New Haven, Kentucky, who has practiced for 53 years in the rugged Lincoln country of the Blue Grass State, was selected as General Practitioner of the Year at the session of the A.M.A. in St. Louis. His office is within less than 20 miles of the birthplace of Abraham Lincoln. He is a native of Kentucky.

The practitioners of the year selected by the American Medical Association are among the choice spirits in the profession. We are sure this applies to Doctors Buck Presley, Andy Hall and John B. Travis. These men impart goodness and impress with profound worth.

NEUROPSYCHIATRIC MEETING

The sixth annual V. A. Neuropsychiatric Meeting will be held at the Veterans Administration Hospital, North Little Rock, Arkansas, on February 25 and 26, 1954. Guest lecturers who have already indicated that they will participate include the following: Dr. Kenneth E. Appel, president, American Psychiatric Association, Philadelphia, Pennsylvania; Dr. Franz Alexander, director, Chicago Institute for Psychoanalysis, Chicago, Illinois; Dr. Francis J. Braceland, Psychiatrist-in-Chief, Institute of Living, Hartford, Connecticut; Dr. Richard L. Jenkins, Chief, Research Section, Psychiatry and Neurology Service, Department of Medicine and Surgery, Veterans Administration, Washington, D. C.; Dr. William Malamud, Professor of Psychiatry and Chairman of the Department of Psychiatry and Neurology, Boston University School of Medicine, Boston, Massachusetts;

Dr. Jules H. Masserman, Private Practice, Neuropsychiatry and Psychoanalysis, Chicago, Illinois; Dr. Henry G. Schwartz, Professor of Neurological Surgery, Washington University, St. Louis, Missouri; Dr. Harvey J. Tompkins, Director, Psychiatry and Neurology Service, Department of Medicine and Surgery, Veterans Administration, Washington, D. C.; Dr. Gregory Zilboorg, Psychoanalyst and Medical Historian, New York, New York.

In addition to scientific sessions throughout the two-day period, there will be a large number of technical exhibits prepared by hospital staff members. Dr. Appel will be the principal speaker at the dinner meeting Thursday evening, February 25. There will be no charge for registration and attendance of all interested professional personnel. Further information may be obtained by writing to Dr. Ewin S. Chappell, director, Professional Education, Veterans Administration Hospital, North Little Rock, Arkansas.

ABSTRACT FROM PEDIATRIC LITERATURE

by

Harvey F. Garrison, M.D.

Evaluation of Red Cross Gamma Globulin As a Prophylactic Agent for Poliomyelitis. William Mcd. Hammon, Lewis L. Coriell, Paul F. Wehrle, and Joseph Stokes, Jr., J.A.M.A. 151: 1272-85, April 11, 1953.

Red Cross gamma globulin, in an average dose of 0.14 cc. per pound of body weight, in controlled field tests in three epidemic areas was shown to give highly significant protection against paralytic poliomyelitis. These conclusions are based on 104 cases of paralytic disease occurring among approximately 55,000 children, half of whom received gamma globulin and half gelatin. The period of follow-up was 14 weeks. Cases during the first week following the injection of gamma globulin were modified significantly in severity. During the next four weeks a high but not complete degree of protection was demonstrated. During the sixth to the eighth week after injection the protection appeared to be waning, and was not detectable after the eighth week. No evidence was found to indicate that the injections of the gelatin had led to localized or generalized paralysis. Recommendations are offered regarding dosage and methods of administration of gamma globulin.

COMMENT:

The above article in regard to the use of gamma globulin for the prevention of polio reminds me to say that the new vaccine probably will take the place of gamma globulin for the prevention of measles. I am sure all of the physicians join me in saying that we are now getting a taste of government red tape in the process of obtaining a bottle of gamma globulin even for the prevention of measles. I am sure that after they hear from the thousands of physicians over the country who are complaining about the manner to which they have to resort in order to obtain it, some changes will be made. The idea of a mother bringing a group of children to your office for inoculation with gamma globulin to prevent measles and having to wait until you can fill out a long form and send to the health department to get the globulin to use is absurd. This is past the stage of being ridiculous and should be stopped immediately.

ALPHABETICAL LIST — EXHIBITORS — MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY, MEMPHIS, TENNESSEE

February 9-12, 1954

Abbott Laboratories, North Chicago, Illinois
A. S. Aloe Company, St. Louis, Missouri
Ames Company, Inc., Elkhart, Indiana
Ayerst, McKenna & Harrison, Ltd., New York, N. Y.
Baby Development Clinic, Chicago, Illinois
Bilhuber-Knoll Corporation, Orange, New Jersey
Brayten Pharmaceutical Company, Chattanooga, Tennessee
George A. Breon & Company, New York, N. Y.
Brown & Williamson Tobacco Corp., Louisville, Kentucky
Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N. Y.
Central Surgical Company, Inc., Little Rock, Ark.
Ciba Pharmaceutical Products, Inc., Summit, New Jersey
Delta Surgical, Inc., Memphis, Tennessee
The Dick X-Ray Company, Memphis, Tenn.
Eaton Laboratories, Inc., Norwich, New York
H. G. Fischer & Company, Franklin Park, Illinois
Flint, Eaton & Company, Decatur, Illinois
General Electric Co., X-Ray Dept., Memphis, Tenn.
Gerber Products Company, Freemont, Michigan
H. J. Heinz Company, Pittsburgh, Pa.
Hoffmann-LaRoche, Inc., Nutley, New Jersey
Holland-Rantos Co., Inc., New York, N. Y.
Kay Surgical, Inc., Memphis, Tenn.
Lederle Laboratories Div., American Cyanamid Co., Pearl River, New York
Eli Lilly and Company, Indianapolis, Indiana
Lincoln Laboratories, Inc., Decatur, Illinois
J. B. Lippincott Company, Philadelphia, Pa.
M & R Laboratories, Columbus, Ohio
J. A. Majors Company, New Orleans, La.
Mead Johnson & Company, Evansville, Indiana
Medco Products Company, Tulsa, Oklahoma
Memphis Limb & Brace Company, Memphis, Tenn.
The Mennen Company, Morristown, New Jersey
Mercere Surgical, Inc., Memphis, Tenn.
The Wm. S. Merrell Company, Cincinnati, Ohio
Mid-South Medical Gases, Inc., Memphis, Tenn.
Miller Surgical Company, Chicago, Illinois
The National Drug Company, Philadelphia, Pa.
Nepera Chemical Co., Inc., Yonkers, New York
Ortho Pharmaceutical Corporation, Raritan, New Jersey
Parke, Davis & Company, Detroit, Michigan
Pet Milk Company, St. Louis, Missouri
Pfizer Laboratories, Brooklyn, New York
Wm. P. Poythress & Company, Inc., Richmond, Virginia
R. J. Reynolds Tobacco Company, Winston-Salem, N. C.
A. H. Robins Company, Inc., Richmond, Virginia
J. B. Roerig and Company, Chicago, Illinois
Sandoz Pharmaceuticals, New York, N. Y.
Schering Corporation, Bloomfield, New Jersey
G. D. Searle & Co., Chicago, Illinois
Sharp & Dohme, Inc., Philadelphia, Pa.
Smith-Dorsey, Lincoln, Nebraska
Southern Surgical Supply Co., Memphis, Tenn.
E. R. Squibb & Sons, New York, N. Y.
Wm. T. Stover Co., Inc., Little Rock, Ark.
The Stuart Company, Chicago, Ill.
Swift & Company, Chicago, Ill.
Tablerock Laboratories, Inc., Greenville, S. C.
Frederick Trout Co., Inc., Atlanta, Ga.
The Upjohn Company, Kalamazoo, Michigan
U. S. Vitamin Corporation, New York, N. Y.
Vaisey-Bristol Shoe Company, Inc., Monett, Missouri
Varick Pharmacal Company, Inc., New York, N. Y.
Al Vogel X-Ray Company, Memphis, Tenn.
Warner-Chilcott Laboratories, New York, N. Y.
The William A. Webster Company, Memphis, Tenn.
White Laboratories, Inc., Kenilworth, New Jersey
Winthrop-Stearns Inc., New York, N. Y.
Wyeth Laboratories, Philadelphia, Pa.

CHEST PHYSICIANS

The second regional Postgraduate Course on Diseases of the Chest will be held in New Orleans, Louisiana, February 15-19, 1954, followed by the annual Postgraduate Course on Diseases of the Chest to be held at the Bellevue-Stratford Hotel, Philadelphia, Pennsylvania, March 15-19, 1954.

Further information may be secured by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

ANNOUNCEMENTS

John E. Whiteleather, M.D., announces the association of James L. Booth, M.D., in the practice of radiology, Baptist Memorial Hospital, Memphis, Tennessee.

The United States Civil Service Commission has announced a new Medical Officer examination for filling the positions of rotating intern, $2,800 a year, and resident in training in psychiatry and in neurology, $3,400 to $4,200 a year, in St. Elizabeth's Hospital in Washington, D. C. Appointments are to begin on July 1, 1954.

Applications will be accepted by the Executive Secretary, Board of U. S. Civil Service Examiners, St. Elizabeth's Hospital, Washington 20, D. C., until further notice.

"Doctors must know more of public thinking regarding fees and physician-patient relationship if we are to continue to exist as free scientists and practitioners." —Dr. E. J. McCormick, President A.M.A.

FIFTY-YEAR BIOGRAPHICA

BENJAMIN LAMPTON CRAWFORD

Benjamin Lampton Crawford, son of James Howell and Minerva Sandifer Crawford, was born March 28, 1879 in Tylertown, Mississippi.

He received his medical education at Jefferson Medical College, graduating in 1904. Since 1908, Doctor Crawford has practiced at Tylertown.

Doctor Crawford served as president of the Tri-County Medical Society and also of the Mississippi State Medical Association. Likewise, he served as president of the Tylertown Rotary Club and president of the board of trustees of the Tylertown High School.

From 1916 until 1924, Doctor Crawford served as a member of the State Board of Health.

In June, 1953, the State Medical Association honored Doctor Crawford with lifetime membership in the Fifty-Year Club.

He has, for many years, served his fellowman faithfully and well and continues to contribute to the tradition of medicine in his practice at Tylertown.

JOHN LEONARD MELVIN

John Leonard Melvin, son of Mr. and Mrs. George W. Melvin, was born June 19, 1873, in Ellisville, Mississippi.

He received his medical degree from the University of Nashville, 1901, and did postgraduate work following.

Doctor Melvin first began practicing medicine at Ovett and remained there until 1917 when he went to Shuqualak.

In September, 1952, he received a certificate for fifty years practice from the University of Tennessee.

On June 9, 1952, the Fifty Year Club of the State Medical Association honored Doctor Melvin with lifetime membership.

Still in active practice, Doctor Melvin is loved by young and old alike. He keeps up with his profession by constant reading and continues to render service to his fellowman.

BOOK REVIEWS

Diseases of Women, by Robert J. Crossen, M. D., F.A.C.S., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine. Tenth edition, published by the C. V. Mosby Company, St. Louis, Mo., 935 pages, with 990 illustrations, including 41 in color. Price, $18.50.

For many years the general practitioner has found the Crossen volumes of *Diseases of Women* the most adequate and authoritative gynecologic text available. Arrangement of the facts in clear and systematic form comprises its chief value. The tenth edition endeavors to present the facts and developments which are making history in the gynecologic field, and to bring to the practitioner comprehensive diagnostic and therapeutic aids made possible by these advances.

Of particular importance are the additions on staining techniques, the interaction of enzymes, hormones, vitamins, and various other substances. There is one full chapter on the chemistry and actions on the hormones. Included also is an illuminating discussion of the psychosomatic aspects of gynecologic problems.

Additions to diagnostic aids include: use of the vaginal smear in detection of early carcinoma, or ovulation; other and new tests for ovulation, pregnancy; culdoscopy; and culdocentesis.

Therapy of various conditions has been brought up to date. Throughout the book illustrations are used freely to elucidate salient points.

Diseases of Women by Crossen in the tenth edition remains the unsurpassed and up-to-date text on gynecologic fundamentals.

Review of Physiological Chemistry, by Harold A. Harper, Ph. D., Professor of Biochemistry, University of San Francisco. Lecturer in Surgery, University of California School of Medicine, San Francisco. Fourth edition, published by Lange Medical Publications, University Medical Publishers, P. O. Box 1215, Los Altos, Calif. Price $4.00.

Probably Dr. Harper recognized the need for such a volume as this because of his responsibility to students. Probably no book available contains as much as *Review of Physiological Chemistry* for specific preparation by the young physician for state and specialty boards. But the man in general practice can rapidly lose step with this branch of medical science if he does not endeavor to keep up with the intensive research and advances in the field.

The volume, 330 pages, is amply illustrated by structural tables, and is divided into chapters on the various classifications of body chemistry, carbohydrates, lipids, proteins, etc., and their metabolisms—with recent findings on the chemistry and functions of the hormones.

A companion volume for the student text in biochemistry, this concise edition is no less valuable to the general practitioner.

Science and Man's Behavior, by Trigant Burrow, M.D., Ph. D., edited by William E. Galt, Ph. D. Published by the Philosophical Library, New York. 564 pages, included glossary and index. Price $6.00.

The author defines phylobiology as "the science of behavior that studies the relation of the organism as a whole in its adaptation to the environment and to other organisms." So concerned is he with man's dilemma in trying to cope with the stresses and pressures of life today that he solicited the contributions of twenty-nine eminent scholars in the philosophical field in compiling the findings contained in *Science and Man's Behavior.*

Dr. Burrow believes that through employment of suitable technique, man's neurosis and conflict can be subjected to scientific definition and control. A psychoanalyst of longstanding experience and observation, his studies merit the consideration of the busy man in general practice.

Remind your secretary to be on the lookout for a new Public Relations manual entitled *Rx Public Relations*," being distributed this month by the American Medical Association to all its members. Pamphlet covers many things from the human to the business side of medical practice. It contains numerous suggestions offered by physicians from all parts of the country, giving useful tips on improving doctor-patient relationships and

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Health is everybody's business. Optimal health is not an inalienable right and privilege of the individual that comes automatically. The health of the individual must be actively worked for, and the health of the community must be carefully planned, developed, and nurtured. The health program must consider the entire community. Vlado A. Getting, M.D., J.A.M.A.

DEATHS

DR. HARTWELL T. ASHFORD

Dr. Hartwell T. Ashford, prominent Clinton physician and father of H. T. (Bubba) Ashford, Hinds County circuit clerk, died suddenly at his home in Clinton December 15, stricken shortly before while at the Clinton post office. He was 76.

Dr. Ashford, one of Mississippi's few remaining country doctors, was born at Bolton, Miss., and had resided in Hinds County all of his life. He observed the completion of the fiftieth year of practice as a doctor last August at a celebration that also marked the Golden Wedding anniversary of himself and his wife, Mrs. Lyda Hooker Ashford.

Funeral services were conducted at the Clinton Baptist Church.

Dr. Ashford was the son of the late Dr. James and Mary Ashford of Bolton and attended Jefferson Military College at Washington, Miss. He received his medical degree from Louisville, Ky., Medical College in 1903 and he and Mrs. Ashford, then his bride, moved to Clinton to make their home. He had also practiced in Bolton, Brownsville, Pocahontas and at Valley Park.

Dr. Ashford, in addition to carrying on his own private practice at Clinton, had been physician for Mississippi College, Clinton, since 1927, when he returned to Clinton to live. He was a member of the Mississippi Medical Association, a Mason, a member of the Clinton Baptist Church, and was an honorary member of the Clinton Kiwanis Club.

Dr. and Mrs. Ashford, at the time of his death, were making their home at the same house where they first lived after their marriage when he began the practice of medicine.

To hundreds of residents in the county, he was known as "Dr. Ash." During the early years of his practice, Dr. Ashford carried his stock of medical supplies—there were no drugstores where he practiced then—in his saddle pocket or strapped to a bicycle, according to his means of transportation at the time.

While practicing in Pocahontas, where he moved from Clinton, he opened the first drugstore there upon the petition of the people of that community. It was there that he owned one of the first auotmobiles in Hinds County, and he and W. H. Lane owned the first in Pocahontas.

In addition to his wife, and his son, he leaves another son, A. W. Ashford of Clinton; a daughter, Mrs. R. H. Johnston, Clinton; two brothers, J. A. Ashford, Pocahontas, and A. V. Ashford, Bolton; two sisters, Mrs. Richard Denman, Jackson, and Mrs. W. R. Wallace, Memphis, and five grandchildren.

DR. J. J. LANDRETH

Dr. John J. Landreth, of Bruce, Miss., who received his doctor of medicine degree in 1898, is one of 57 physicians honored by the University of Tennessee Medical units at commencement exercises in Memphis Monday night, September 24. He died November 13.

The University recognized the services which Dr. Landreth rendered to his community during the half century since his graduation.

The physician was presented with a Golden "T" certificate at commencement exercises. A tour of Memphis and a luncheon honoring the group preceded the ceremony.

Dr. Landreth received his degree from the old Memphis Medical College, which was consolidated with the University of Tennessee College of Medicine in 1913.

DR. J. R. ANDERSON

Services were held November 13 in Hulett's Funeral chapel for Dr. J. R. Anderson, 77, pioneer resident of Sumrall.

Dr. Anderson settled in Sumrall 50 years ago. Shortly after his arrival he married Miss Bertie Hudson, daughter of Mr. and Mrs. A. B. Hudson.

Other survivors include his son, Dr. Kermit H. Anderson of Riverside, Calif.; two daughters, Mrs. Byron Lott of Sumrall, and Mrs. Jack W. Harris of Riverside, and one brother, Bob, also of Riverside; four grandchildren and numerous nieces and nephews also survive.

Dr. Anderson was active in civic, religious and fraternal affairs.

He was a member and former president of the Sumrall school board; he was one of the founders of the bank of Sumrall and served on the board of directors. He took an active part in farming and cattle raising and worked for agricultural development of the Sumrall area.

Dr. Anderson served as physician and surgeon for the J. J. Newman Lumber Company and the Mississippi Central Railroad. He was a graduate of the Memphis Medical College, class of 1902.

He was a member of the Baptist Church and the Masonic order, Epley Lodge No. 466, Sumrall.

DR. C. O. FARRAR

The Charles O'Connor Farrar, 81, retired physician of Nettleton, Miss., died on December 4. Born in 1872 in Fulton, in almost the same vicinity in which he spent his whole life, he went to Memphis for his medical education, graduating in 1901 from the Memphis Medical College. He was licensed to practice in Mississippi in the same year, which entitled him two years ago to membership in the Fifty Year Club of the Mississippi State Medical Association.

DR. THOMAS GRIFFITHS

Funeral services for Dr. Thomas H. D. Griffiths, formerly of Biloxi where he conducted a salt marsh mosquito survey for the United States Public Health Service, who died in U. S. Marine Hospital, Baltimore, Md., were held in Fort Lauderdale, Fla., Oct. 26.

He was a veteran of 40 years with the U. S. Public Health Service and had been Dade County, Fla., health commissioner.

Dr. Griffiths, who was 74, was "probably as much responsible as any man for the fact that the South is relatively free of malaria," a fellow physician stated.

He was one of three public health service workers who voluntarily infected themselves with malaria in New Orleans in 1915 in order that the public health service could work out an effective schedule of quinine treatment of the disease.

Dr. Griffiths wrote many articles and papers on national and international public health, particularly concerning yellow fever, dengue and malaria. He was a Presbyterian and a Mason.

Surviving are his wife, a son and four daughters.

If two angels were sent down from heaven, one to conduct an empire, and the other to sweep a street, they would feel no inclination to change employments. —*John Newton*

Woman's Auxiliary

DELTA AUXILIARY UNITS ELECT

The following new presidents take office in their respective county units of the Delta Medical Auxiliary:

Leflore County—Mrs. Toxey E. Hall, Belzoni, president

Bolivar County—Mrs. D. Tuminello, Cleveland, president

Humphreys County—Mrs. Sam Sugg, Isola, president.

TODAY'S HEALTH

A friendly Doctor's wife brought *Today's Health*
To a little country school—a single room so bare,
And found the teacher low in spirit,
With so little about which to care.

Then the children came, without pomp or wealth,
And found the copy of *Today's Health*.

Its pages they turned, its lines they read,
Of the ideals of Hippocrates they were fed.

This gift not only accomplished its ends,
It made real friends.

Probably no lay person is asked more questions about health problems and medical subjects than the wife of a physician. And, except for her husband, she can find no better source to give her the correct answers than the pages of *Today's Health*. Most physicians, like all husbands, would rather talk about other things than their profession or business, when off duty at home, so you can relieve your husband of much of this "shop talk" by keeping yourself informed through the pages of *Today's Health*.

In the eighty-third Congress the controversial Bricker resolution holds over from the last session, and may receive early consideration in the Senate. Senator Bricker believes that Congress should have some check on the President's treaty-making powers. The American Medical Association repeatedly has indorsed the Bricker resolution as a safeguard against the introduction into this country by treaty of government-controlled medical plans without Congress itself having a chance to pass on them.

Endometriosis of the Sigmoid Colon

HARWELL WILSON, M.D. and WILLIAM T. TYSON, JR., M.D.†

Memphis, Tenn.

INTRODUCTION

THE PURPOSE of this paper is to emphasize the importance of endometriosis as a cause of rectal bleeding and obstruction of the sigmoid colon in women. By definition endometriosis is the occurrence of endometrial tissue outside the limits of the mucosal lining of the uterus. This condition was first described by von Rokitansky in 1860[1]. In 1921 Sampson proposed the theory that endometriosis is due to the reflux of endometrial tissue through the Fallopian tubes during menstruation, with the result that bits of endometrium are implanted into various sites within the peritoneal cavity[2]. These implants form blood-filled (chocolate) cysts which bleed during menstruation and which invade the tissue which surrounds them, resulting in the formation of dense, fibrous adhesions.

The most frequent sites of endometriosis are the uterine musculature and the ovaries, but endometrial-like tissue has been found in such locations as the colon[3], appendix[4], small bowel[5], omentum[6], lung[7], pleura[8], and even in the extremities[9]. While Sampson's theory offers a plausible explanation for endometriosis occurring within the peritoneal cavity, it is difficult to find a satisfactory explanation for the occurrence of endometrial-like tissue in places outside the limits of the peritoneal cavity.

It has been estimated that from 8 to 15 per cent of all women during active menstrual life have endometriosis. Approximately 25 per cent of these have involvement of the rectosigmoid colon. Therefore, 2 to 4 per cent of all women during active menstrual life have some degree of endometriosis of the rectosigmoid colon[3].

Symptoms May Strongly Suggest Carcinoma or Amebiasis

The symptoms are rectal bleeding and cramping lower abdominal pain. The bleeding is usually more pronounced during menstruation. The lesion closely resembles carcinoma clinically. Endometriosis coexisting with carcinoma of the sigmoid colon has been reported[3].

CASE REPORTS

CASE 1. M., a 28-year-old wife of a physician entered the hospital October 3, 1953, complaining of cramping lower abdominal pain, intermittent diarrhea, and the occasional passage of mucous and blood from the rectum for the past three months. The stools had been examined repeatedly for ameba, but none had been found. The rectal bleeding was worse during the menstrual periods. She had no children. Physical examination was entirely negative except for a questionable cystic mass situated high in the left adnexal region. Sigmoidoscopy was negative for 20 cm. The scope could not, however, be passed its full length. Barium enema revealed an annular obstructing lesion in the sigmoid colon which was thought quite definitely by the radiologist to be a carcinoma (Fig. 1). We also felt that on the basis of the history and x-ray findings that carcinoma was the most likely diagnosis. Endometriosis was listed preoperatively as a possibility, however, because blood in the stools had been noticed more frequently at the time of the periods.

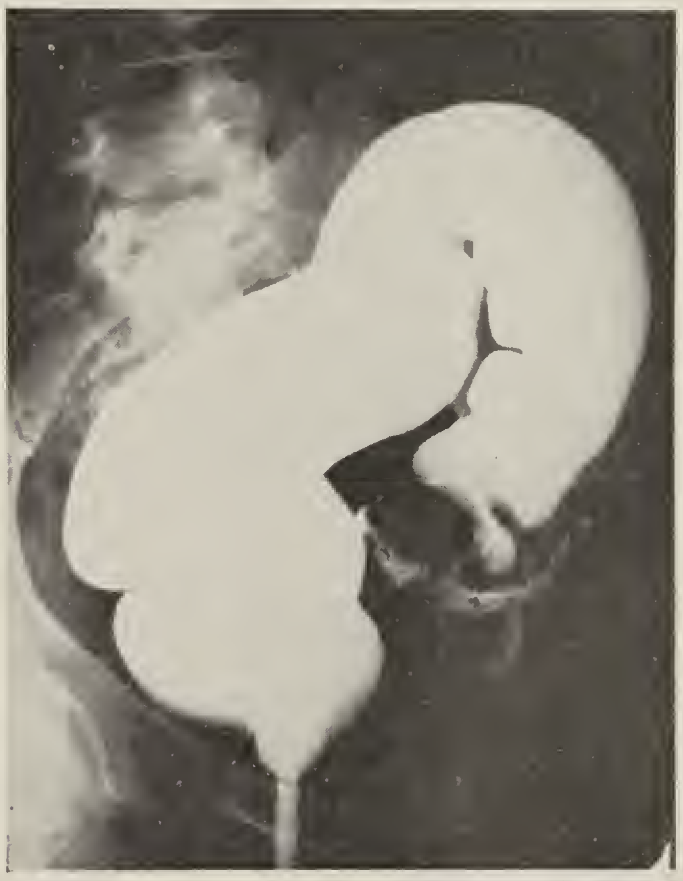

Fig. 1. Barium Enema Showing Annular Obstructing Lesion in the Sigmoid Colon. (Case 1).

At operation there was found a 6 cm. endometrial cyst of the left ovary which was adherent to the sigmoid colon. The process had invaded and encircled the sigmoid at this point, producing a partial obstruction (Fig. 2). Endometrial implants were found in the peritoneum overlying the bladder and uterus. The lesion in the sigmoid was resected and the continuity of the bowel restored by end-to-end anastomosis. The cyst of the left ovary and the peritoneal implants were removed. Except for an attack of pyelitis the postoperative course was uneventful. and the patient went home thirteen days following operation. The patient has appeared to be quite well during the postoperative period since leaving the hospital.

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†From the Department of Surgery of the University of Tennessee College of Medicine and the John Gaston Hospital, Memphis, Tennessee.

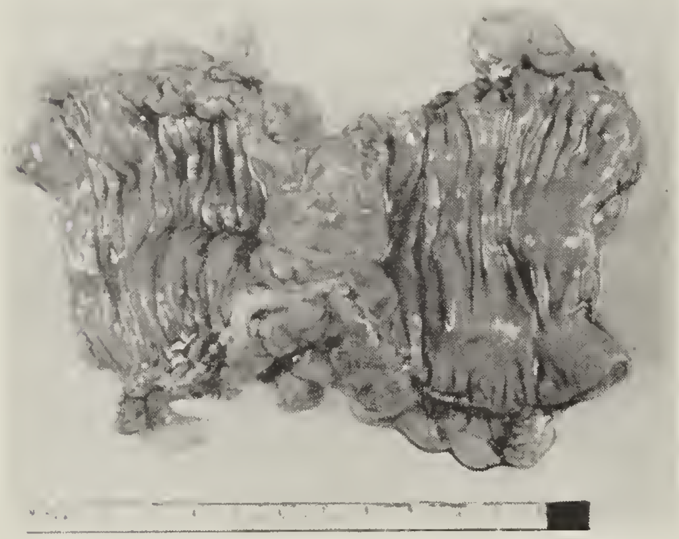

Fig. 2: Gross Specimen of Sigmoid Colon. The colon has been opened. Note that the lesion completely encircles the circumference of the bowel. (Case 1).

CASE 2. V. G., a 47-year-old white woman entered the hospital November 5, 1953, complaining of rectal bleeding and cramping lower abdominal pain occurring only at the time of her menstrual periods for the past five months. She had one child 21 years of age. Physical examination was negative except for the presence of a cystic mass about 7 cm. in diameter located in the left adnexal region. Sigmoidoscopy was negative for 13 cm. Because the rectal bleeding occurred only during the menstrual periods, a preoperative diagnosis of endometriosis of the sigmoid colon was made.

At operation an endometrial cyst of the left ovary was found. It was firmly adherent to the sigmoid colon. The wall of the colon and its mesentery appeared to be involved by the process, but the colon was not clinically obstructed. The colon was separated from the cyst and a bilateral salpingoophorectomy and appendectomy performed. We would ordinarily have performed a total hysterectomy also in a case of this type, but in this patient the uterus was firmly adherent to the rectosigmoid colon. We were, therefore, afraid that in attempting to remove the uterus (which appeared normal) we might inadvertently enter the colon and increase the operative risk involved. The patient made an uneventful recovery and left the hospital twelve days following operation.

DISCUSSION

Because the first patient was young and desired to have children, a conservative operation was done. We feel very strongly that it is better to risk the possibility of having to do further surgery at a later date than to produce a surgical menopause in a young woman. The second patient was approaching the menopause, and we believed that the removal of both ovaries would cause all endometrial tissue to stop functioning, thereby also relieving the rectal bleeding which had occurred only during the menses.

Endometriosis is less frequent in women who have borne children, presumably because the menses cease during pregnancy. It is also uncommon in women having chronic salpingitis, probably because in many of these women the Fallopian tubes are occluded by the inflammatory process and the reflux of blood through the tubes is thereby prevented. These factors would seem to explain the infrequent occurrence of endometriosis in Negro women, in whom multiple pregnancies and salpingitis are common. The incidence of endometriosis among Negro women in the Harlem Hospital was only 0.11 per cent[10].

SUMMARY

Endometriosis should be considered in the differential diagnosis whenever a woman during active menstrual life develops rectal bleeding and some degree of obstruction in the rectosigmoid colon. The lesion may closely resemble carcinoma. We prefer conservative pelvic surgery in young women who may desire to have children and in whom it is undesirable to produce a premature menopause. In women who are approaching the menopause and in whom further child-bearing is unlikely the removal of all functioning ovarian tissue is advocated. In women of this age, unless some contraindication exists, hysterectomy should also be done to prevent possible carcinoma of the fundus or cervix which might develop at some later date.

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The Surgery of Mitral Stenosis

S. GWIN ROBBINS, M.D.†
Memphis, Tennessee

Tremendous advances have been made in the field of cardiac surgery during the past few years. The surgical attack upon pure or relatively pure mitral stenosis has been the most successful.

As early as 1902 Brunton, a British physician, conceived the idea that the obstruction at the mitral valve might be amenable to surgical correction. Cutler, Beck, Allen and Graham and others attempted during the 1920's to treat mitral stenosis surgically. The mortality during these attempts was prohibitive and those who survived surgery were not benefited.

During the past five years under the stimulus of the Philadelphia and Boston groups the surgical attack upon mitral stenosis has been successfully developed to its present stage of safety and effectiveness.

PATHOLOGIC PHYSIOLOGY

The obstruction of the flow of blood through the mitral valve initiates changes in the hemodynamics which are, depending upon the degree of the obstruction, far reaching. The first effect of this obstruction is an elevation of the pressure in the left atrium. This is accompanied by an increase in the size of the left atrium because of the elastic nature of the tissue involved. The increased pressure in the left atrium is transmitted to the pulmonary veins and as the pressure in the veins rises and approaches the ozmotic pressure, transudation into the air spaces or hemoptysis occurs.

As a result of the ever increasing pressure in the pulmonary circulation, both venous and arterial, the right ventricle must work against an added force. Over a given period of time if the pulmonary hypertension is great enough the myocardium of the right ventricle eventually fails, giving rise to the typical picture of right heart failure. It is to be emphasized, however, that the myocardium is usually perfectly normal potentially and that the mechanical obstruction at the mitral valve is the significant underlying cardiac pathology.

An increase in physical activities calling for an increase in cardiac output is not met by the increased cardiac output because the mechanical obstruction at the mitral valve prevents adequate amounts of blood from entering the left ventricle.

The fibrosis and calcification resulting from the rheumatic infection is frequently confined to the edges of the valve leaflets and the adjacent valvular tissue leaving a considerable portion of the valves normal. As inflammation and fibrosis occur there is an agglutination of the two valvular leaflets along the lines of the commissures.

The successful surgical attack in the past five years has been directed at opening the fused commissures rather than attacking the valvular leaflets themselves.

CLINICAL FINDINGS

The history varies from early cardio-pulmonary dysfunction including palpitation and dyspnea to the more advanced cases that present marked dyspnea, hemoptysis, reversible and irreversible congestive failure.

The American Heart Association has devised a grouping of these cases based on easily available information and not upon complicated laboratory procedures.

GROUP I. Those patients who have the characteristic murmur of pure or relatively pure mitral stenosis without any limitation of activities and with no symptoms. Some of these may live a normal life span but many later develop symptoms of mitral stenosis. Surgery is not advocated for Group I.

GROUP II. Those patients with minimal to moderate limitation of activity usually because of dyspnea upon exertion. This group has been described as the "statically incapacitating" and ideal group for surgical therapy.

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†University of Tennessee College of Medicine, Department of Thoracic Surgery.

GROUP III. Patients with marked limitation of activities and increasing dyspnea. There are recurring attacks of pulmonary edema or hemoptysis. This is an acceptable group for surgical correction. The risk is slight and the improvement is usually marked.

GROUP IV. The patients in chronic congestive failure with severe symptoms who do not respond to the medical treatment of the congestive failure. Auricular fibrillation is frequently found in this group. The operative mortality is considerably higher in this group, however, many of these patients are markedly benefited by surgery and without surgery their prospects are indeed quite poor.

Auscultation by an experienced cardiologist is of paramount importance. A typical uncomplicated mitral stenosis presents no problem in auscultatory examination. The difficulty arises and extremely careful evaluation is needed in those cases that present some mitral regurgitation or multivalvular disease.

The posterio-anterior film of the chest reveals enlargement of the cardiac shadow as a result of right ventricular enlargement. In the region of the pulmonary artery there is a prominent bulge and increased vascularity is noted in the pulmonary fields.

Fluoroscopic examination shows left atrial enlargement with posterior displacement of the barium-filled esophagus. The electrocardiogram reveals right axis deviation and auricular fibrillation is frequently present.

Although cardiac catheterization was extensively used in the early cases treated surgically, it is the consensus of opinion today that it offers little if any help in evaluating most patients for mitral commissurotomy.

At times an interatrial septal defect and septal defect associated with mitral stenosis (Lutembacher's syndrome) must be considered in the differential diagnosis.

CONTRAINDICATIONS

At the present time 1) active rheumatic infection, 2) the presence of superimposed subacute bacterial endocarditis, 3) the presence of marked associated mitral or aortic regurgitation and 4) auricular fibrillation with an entirely uncontrollable rate constitute the generally accepted contraindications to mitral commissurotomy.

Auricular fibrillation per se is not a contraindication and the results in these cases compare favorably with those who have a sinus rhythm.

The presence of severe aortic stenosis is no longer a contraindication. In these cases the aortic and mitral commissurotomies are done successively at the one thoracotomy.

Considerable work is being done at the present time on both mitral regurgitation and aortic regurgitation. Although there have been a few successful surgical results, this phase of surgical therapy is still in the development phase.

SURGICAL RESULTS

Glover and O'Neill have recently reported for analysis a series of 164 consecutive cases of mitral commissurotomy with a six-month to three-and-one-half-year follow-up period. There has been marked and sustained improvement in 76 per cent of the cases. The operative mortality was 6 per cent for the entire group and less than 1 per cent in Group II cases. Other series have been reported with comparable results.

Postoperative complications have included cerebral and peripheral embolization, severe pleuro-pericardial chest pain, pericardial effusion, reactivation of rheumatic infection and the occurrence of postoperative arrhythmias.

ANALYSIS OF CASES

The patients selected for surgery were in the following distribution as to clinical grouping: Stage II-2 (although symptoms were moderate they were progressive); Stage III-9; Stage IV-15. Ages ranged from sixteen to fifty-two years with the majority in the third and fourth decade.

In this series of twenty-six cases of mitral commissurotomy there has been one operative fatality. This occurred in an extreme Group IV patient who died on the sixth postoperative day. Auricular fibrillation with a controlled ventricular rate was present preoperatively and the ventricular rate became completely uncontrollable in the postoperative period. One patient who had experienced cerebral and peripheral embolization prior to surgery died suddenly six months following surgery. No postmortem examination was obtained.

We have been fortunate that no immediate postoperative embolization has occurred. In four cases with previous embolic phenomena the tip of the auricular appendage was removed and clots washed out into the pleural space during the ensuing controlled hemorrhage from the left atrium. The added precaution of temporary occlusion of the innominate and left common carotid during intracardiac manipulation is advisable.

Two cases presented too much mitral regurgitation as determined by the palpating finger in the left atrium to allow any mitral surgery. Both of these patients had an uneventful postoperative recovery but naturally were unimproved.

Four of the remaining twenty-two patients were unimproved following surgery, leaving eighteen with moderate to marked improvement. In this group of cases there has been no reactivation of the rheumatic infection.

CONCLUSIONS

It is to be emphasized that mitral commissurotomy is but a "major adjunct" in the treatment and the restoration of these patients to a more normal life. They must always be considered as cardiac patients and kept under the watchful care of their attending physicians.

Both as to the mortality and surgical results obtained it is of the greatest importance that these patients be selected at an early stage before they enter into the dangerous and at times irretrievable stage of chronic congestive failure.

The Clinical Significance of Nipple Discharge in the Non-Lactating Breast[*]

R. R. BRAUND, M.D.[**]
J. M. CHISOLM, M.D.
J. D. PICOTT, M.D.

Memphis, Tenn.

The possible association of a discharging nipple of the female breast with cancer of the breast has been of considerable interest. The correlation between these two conditions is of interest to the physician and is of some concern to the patient. The present study is based upon our experience with 108 clinic patients who complained of a nipple discharge as well as a review of the recent literature.

It is not uncommon to find a small amount of nipple discharge from the non-lactating breast in women in the active child-bearing period. This discharge may be of several kinds. The most common which we have seen is a clear to slightly cloudy discharge. In other instances it has been noted to be dark green, brownish to black, and occasionally bloody containing what appears, grossly, to be bright red blood. It is usually noticed by the patient as a little spot on the brassiere or night clothes. It may come from one or both breasts. Alarmed by this sign the patient seeks the advice of her family physician. Upon him lies the burden of making a differential diagnosis as to the cause of this discharge. He must determine whether immediate treatment or further study is indicated. If a conservative course is followed he must give assurance to the patient that the condition is not of a serious nature.

During the past five years 1,064 patients with all types of breast diseases were examined at the West Tennessee Cancer Clinic. Many of these patients came from your offices through your cancer control program. Among this group of 1,064 women there were 108 or approximately 10 per cent who gave as one of their evidences of disease a discharge from the nipple. (Table I.)

TABLE I

Total Breast Lesions Examined	1064
Number with Nipple Discharge	108 (10.1%)
Number with Cancer	14 (12.9% of 108)

It is with this group of 108 patients with a discharging nipple that we are concerned. In every instance we either obtained pathological information as to the cause of the nipple discharge or such time interval has elapsed to assure us that it was of no serious consequence. The pathological processes varied from clinical carcinoma to those whose only symptom was a slight watery discharge. Smears were taken of the discharging material for microscopic examination in all instances. When the discharge was of a serious character it was not infrequently bi-lateral and in some instances the discharge had been noted for several weeks from one nipple before there would be an involvement of the opposite nipple. If blood was present it was detected by microscopic examination. When the condition was associated with cancer the pathological process was confirmed by our Department of Pathology.

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[*] From the Division of Surgery, University of Tennessee School of Medicine, Memphis.

[**] Read at the biennial meeting of the Mississippi Division, American Cancer Society.

We have excluded from this study those patients in whom the clinical diagnosis of advanced cancer was evident by ulceration, fixation to the skin, the presence of axillary lymph nodes, metastasis, and a large bulky tumor. In these patients the bleeding or discharge did not seem to offer any diagnostic problem as to the basic pathology. We have also excluded from this study those patients who had eczema or some mechanical irritation of the nipple as well as those who proved to have Paget's disease of the nipple.

Dr. Frank Adair in 1930 reported on 108 patients who gave as their chief complaint a bloody discharge from the nipple. He found cancer to be present in 47.2 per cent of these patients. Fitts in 1951 analyzed 97 patients with a nipple discharge in 65 of whom blood was found on microscopic examination. One-fourth of these patients subsequently proved to have carcinoma. Lewison and Chambers in 1951 reported a series of 114 patients with a nipple discharge and found that 20 per cent of them had carcinoma. Donnelly in 1950 reported 219 cases with 44 per cent incidence of carcinoma. One hundred twenty-one of these had a sanguinous discharge and of these 121 sixty-one had cancer. Campbell in 1946 reported 55 patients with a nipple discharge, both bloody and non-bloody, in whom 40 per cent were discovered to have cancer. (Table VI.) He also included in his study 543 patients with breast cancer seen at the University of Minnesota and noted that only 3 per cent of these had a bloody discharge. In none of these papers was a correlation made with other physical findings indicative of carcinoma and the nipple discharge.

TABLE VI

Author	*No. of Cases*	*Bloody Discharge*	*Carcinoma*
Fitts, et al Ann. Surg. 1951 (U. of Penn.)	97	65	25%
Lewison & Chambers J.A.M.A. 1951 (J. Hopkins)	114	54	20%
Donnelly Ann. Surg. 1950 (Iowa)	219	121	44%
Campbell Surgery 1946 (U. of Minn.)	55	?	40%
Present Series (U. of Tenn.)	108	57	13%

TABLE II

CHARACTER OF DISCHARGE

Sanguineous	57
Benign Disease	48
Malignant Disease	9
Incidence of Cancer	15.7%
Non-Sanguineous	51
Benign Disease	46
Malignant Disease	5
Incidence of Cancer	9.8%

TABLE III

TOTAL NIPPLE DISCHARGE

Age	*Benign*	*Malignant*
Under 30	31	0
30-39	27	1
40-49	20	5
50-59	9	2
60 and over	7	6
Totals	94	14

In our series of 108 patients who gave a history of a nipple discharge 57 described it as bloody. Of these 57 patients 48 proved to have benign diseases either due to intraductal papillomas or chronic cystic mastitis. Nine of the patients who had a bloody discharge from the nipple proved to have carcinoma. (Table II.) It is noteworthy that in 8 of these patients a clinical diagnosis of cancer was made on physical examination. A palpable mass was present in each instance. It was firm and presented enough of the characteristics of cancer to warrant the examining physician to put this as his first diagnosis. All were confirmed later by microscopic examination. In the remaining patient a 2 cm. mass was present and its surgical removal was recommended for microscopic examination because the examining physician suspected the possibility of cancer. This represents the only case in this study in which a sanguineous discharge of the nipple was associated with cancer in which carcinoma was not the primary diagnosis. In this patient cancer was the secondary diagnosis, the first being chronic cystic mastitis.

There were 51 patients presenting a non-sanguineous discharge in whom 46 proved microscopically to have benign disease and 5 proved to have carcinoma. In the 5 patients with cancer the diagnosis was made clinically due to the presence of a lump in the breast, the lump being firm and in 2 instances showing some slight retraction of the overlying skin.

It has been pointed out by many authors that a nipple discharge is not an uncommon condition in the non-lactating breast in the active child-bearing period. With this thought in mind we studied our patients as to the relationship of age, to discharge, and underlying pathology. It is evident that the instance of a nipple discharge associated with cancer increases with the age of the patient while its association with benign disease decreases with advanced age. (Table III.) Over half of our patients with a nipple discharge associated with benign disease were less than 40 years of age. Those associated with cancer were near or beyond 40 years of age.

Approximately 50 per cent of the admissions to the West Tennessee Cancer Clinic for all types of neoplasms are negroes. An analysis of our clinical material as to race shows that the presence of a nipple discharge was more common in the colored than the white, an incidence of 2 to 1. (Tables IV and V.) This is an observation which we are unable to explain. We offer the thought that it may be due to a higher percentage of colored women nursing their infants than is noted in the white race. An attempt to analyze our records on this basis, however, was unsuccessful since accurate data were not recorded in many instances. As a general observation we have noted breasts of the colored race to be more developed and give a higher percentage of nursing mothers though no statistical information is available.

TABLE IV
SANGUINEOUS DISCHARGE

	Benign			*Malignant*		
Age	White	Negro	Total	White	Negro	Total
Under 30	3	10	13	0	0	0
30-39	3	10	13	0	1	1
40-49	3	7	10	1	0	1
50-59	2	4	6	0	2	2
60 and over	3	3	6	2	3	5
Totals	14	34	48	3	6	9

TABLE V
NON-SANGUINEOUS DISCHARGE

	Benign			*Malignant*		
Age	White	Negro	Total	White	Negro	Total
Under 30	9	9	18	0	0	0
30-39	6	8	14	0	0	0
40-49	0	10	10	3	1	4
50-59	1	2	3	0	0	0
60 and over	0	1	1	0	1	1
Totals	16	30	46	3	2	5

DISCUSSION

We have noted that 10 per cent of 1,064 patients who presented themselves for some breast pathology gave as one of their symptoms a discharge from the nipple. In the non-lactating breast there was no specific type of discharge for any of the various breast lesions. Cancer may cause a bloody discharge. In other patients it may appear purulent, cloudy, dark green, or black. The discharge even when bloody is of little significance in the differential diagnosis of carcinoma of the breast. When associated with a palpable tumor the presence of the tumor alone is sufficient indication for further investigation. When a discharge is associated with diffuse nodularity a segmental resection of the duct and the breast tissue which it drains may be done. When the discharge is scanty and microscopic examination does not reveal the presence of red blood cells and no palpable tumor can be demonstrated, we believe the patient should be kept under observation and surgical intervention deferred. When blood cells are demonstrated in the nipple discharge we recommend removal of the duct together with the area which it drains even in the absence of any palpable tumor. In the well-developed or in the obese breast one must be cognizant of the fact that a small intraductal papilloma or adenosis is most difficult to palpate and in many instances the breast will reveal no palpable disease.

In closing I should like to convey to you two opposing opinions. Lewison makes the following statement: "We must grow more and more accustomed to suspecting malignant disease on less and less clinical evidence. The onus of responsibility rests heavily upon those who pursue the policy of watchful waiting. Thus the virtue of nipple discharge as a diagnostic sign in foresight may be irretrievably lost in hindsight." On the other hand Campbell made the following statement: "It is my conviction that too much fear, even panic, has been exhibited toward the symptom of the discharge from the nipple." From our analysis of these 108 patients we are inclined to share the opinion of Campbell. A nipple discharge in itself is alarming to the patient and should lead every physician to suspect the possibility of some underlying pathology. The physician should, however, not be guided by the nipple discharge in his management of the patient but should correlate this with other physical findings. The presence of blood, we believe, justifies microscopic examination of the involved area. The presence of blood and a palpable tumor increases the possibility of cancer. In the latter instance the tumor itself would necessitate further investigation were the nipple discharge not present.

Treatment of Perforated Duodenal Ulcers

J. L. FARRINGER, JR., M.D. and G. E. GILLESPIE, M.D.†

Memphis, Tennessee

THERE HAS been much recent interest in the initial treatment of perforated duodenal ulcers. The British literature abounds with articles on this subject. Ulcers fall generally into two groups—those in which conservative management with intragastric suction is advocated and those in which gastric resection is recommended as the primary treatment. In this latter group is Nuboer[1] who reports his mortality in two groups. The mortality in 69 resections, between 1940 and 1947, was 5.7 per cent. The mortality in 62 cases, between 1947 and 1951, was 1.6 per cent. Certainly this is a very respectable mortality rate. He states that primary partial gastric resection is now the operation of choice in "most Dutch medical centers", and, furthermore, nearly all perforated ulcers treated at Utrecht University Hospital since 1943 have had partial gastrectomy. "No regard was given to the patient's age or the duration of the perforation". He also states, "When the ulcer perforates one is dealing with a chronic ulcer, for which partial gastrectomy is the accepted treatment".

Lowdon[2] reports resecting 51 of 65 cases without a death. He reports four deaths in the 14 patients not resected. He does not mention his method of selecting the cases for resection.

Eberles[3] in advocating primary gastric resection as the treatment of choice for perforated duodenal ulcer states that 40-43 per cent of patients who have a perforated duodenal ulcer have further symptoms.

Tovell[4] followed 114 patients after closure of perforated duodenal ulcer. He found that there was a 6.3 per cent operative mortality. Twenty-three per cent were asymptomatic, 8 per cent had mild symptoms, 22 per cent had typical ulcer symptoms, 12 per cent had severe symptoms, and 35 per cent had additional operative procedures performed. In short, only 35 per cent of this group had symptoms sufficient to justify operative intervention. It seems then that only this 35 per cent should have been resected at the time of the perforation even if primary gastric resection for perforated duodenal ulcer proves to be a safe procedure. He reports that 6 per cent of this group perforated a second time.

Turner[5] has followed 147 of 224 patients after closure of a perforated duodenal ulcer in the presence of acute diffuse peritonitis. There was a mortality during the last four years of 3.3 per cent. He reports that of the 147 patients followed, 122 (82.9 per cent) continued to have ulcer symptoms. However, in spite of this very high incidence of continued symptoms, only 38.5 per cent had sufficient difficulty to warrant further surgery. Seven of these cases perforated a second time.

Even though this series shows such a high incidence of persistence of ulcer symptoms, Turner does not advocate primary resection but rather resection in from three to five weeks.

Neuffer[6] in 1938 reported 55 cases of perforated duodenal ulcer of which 44 had a primary resection of the Billroth I type. He had a 13.6 per cent mortality. All of the 11 cases not resected were between 50 and 77 years old and were over 12 hours postperforation when seen. He advocates primary resection when the patient is in good condition as regards the cardiovascular system and when less than 10 hours have elapsed since perforation.

In 1940, DeBakey[7] presented an excellent review of the literature up until that time on perforated peptic ulcers. He discussed primary gastric resection which had been going on in Europe for 20 years at that time. He concluded that the difference in the rate of recurrence of symptoms between simple closure and resection did not justify the added risk of the larger procedure and that certainly primary resection should be performed only by men with wide experience in gastric surgery.

In 1944 Strauss[8] reported eight primary gastric resections performed on the last 12 cases of perforated peptic ulcer he had handled. There were no deaths in the group of patients who were resected.

Magladry[9] reported before the Western Surgical Association in December, 1952, a series of 200 cases of perforated gastro-duodenal ulcers. The treatment of choice in the duodenal ulcers was closure with a tag of omentum. In the follow-up of these cases he reported the gastric ulcer patients were 80 per cent symptom free, 8.5 per cent had to have further medical treatment and 8.6 per cent had to have further surgical treatment. In the patients with duodenal ulcer 71.9 per cent were symptom free, 14.6 per cent had to have further medical treatment, and 9.8 per cent had to have further surgical treatment.

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†From the Department of Surgery of the University of Tennessee College of Medicine and the John Gaston Hospital, Memphis, Tennessee.

In his discussion of Dr. Magladry's paper, Dr. Benton A. Cooley of Houston, Texas, reported that there had been 47 cases of perforated duodenal ulcer treated at Baylor University Hospital by primary gastric resection with only one death. He strongly advocated this as the method of choice in treating perforated duodenal ulcers.

Dr. M. M. Zinninger of Cincinnati, Ohio, and Dr. Claude Hunt of Kansas City, Missouri, in the discussion of this same paper, both said they believed simple closure was an adequate and a safer procedure in perforation of duodenal ulcers. Because of the danger of malignancy both these men preferred to resect the stomach in cases of perforation of a gastric lesion.

Beahrs[10] and associates recently reported on 114 cases of perforated duodenal ulcer treated by simple closure with three deaths. They indicated that at the Mayo Clinic simple closure remains the method of choice in treating perforated duodenal ulcers.

Mayo and Fitchett[11] report a follow-up of 140 of 160 cases of perforated peptic ulcer. They found only 14.3 per cent of those followed were entirely free of ulcer symptoms. However, only 30.0 per cent had sufficient symptoms to require medical care, and only 16.4 per cent required further surgery. These figures are in agreement with others we have quoted. To put the collected statistics in round figures, about one-third of the patients require medical treatment for further symptoms of ulcer, about one-sixth have occasional or minimal symptoms, about one-sixth are completely symptom free, and about one-third require additional surgery.

The cases of perforated duodenal or gastric ulcer for the ten-year period 1942 through 1951, have been reviewed at the John Gaston Hospital. During this period there were 155 cases of perforated duodenal or gastric ulcer. This includes those that were later proved to be gastric carcinoma. Of this group 54 patients (34.8 per cent) required further treatment, either medical or surgical. Accurate follow-up on those patients who did not require further treatment is not available. Seven of the 155 patients (4.5 per cent) perforated a second time. We have been interested in a closer study of these cases. It is seen that the ages of the patients at the first perforation varied from 26 to 51, with an average age of 36. The length of time between perforations ranged from one to nine years, with an average of 4.2 years. In all of these cases of repeated perforation except two, the site of perforation was the anterior wall of the duodenum. In these two cases there was first a gastric perforation and then later perforation of an anterior duodenal wall ulcer. We have found no cases of more than two perforations.

On our surgical service the treatment of choice for perforated duodenal ulcers has been and remains primary closure with an attached or free omental graft. Primary resection is reserved for those cases with a perforated gastric ulcer where the condition of the patient at the time of operation appears to be good enough to permit a resection with safety. The conservative therapy of gastric suction without surgical closure is used only in the cases which present themselves very late, when the perforation has been sealed and there are no signs of generalized peritonitis, or when the patient is in such poor condition as to make operation unjustifiably hazardous.

DISCUSSION

The apparently excellent operative mortalities reported by those who advocate primary gastric resection for perforated duodenal ulcer will probably bear further study. In the first place, it is apparent from reading their reports that almost all of them admittedly select only the better operative risks for resection. This certainly indicates good surgical judgment; however, it is not then proper to compare the mortality from this operation, which is performed only on the better risk patients, with the mortality of simple closure, which must be performed on all types of patients.

In order even to consider the concept of primary gastric resection for perforated duodenal ulcer, one must first be willing to accept the premise that all ulcers which perforate are intractable. We do not believe that the evidence supports this belief. Many of the perforations we see are in relatively young individuals, some of whom have not previously been diagnosed as having duodenal ulcer. Others have not taken their medical treatment seriously, a condition that often changes after a perforation.

It is fairly generally agreed that the treatment of choice for duodenal ulcers is medical. Gastric resection is not a physiological treatment for duodenal ulcers. It is merely a poor substitute for the correct treatment, which is not known, and should be undertaken only after medical treatment has been thoroughly tried and has failed. This failure is indicated by hemorrhage, stenosis, or intractable pain. Perforation may but does not necessarily indicate failure of the medical treatment.

A review of the literature indicates that gastric resection is not 100 per cent effective in relieving patients who have duodenal ulcer.

Ross and Meadows[12] report on a follow-up of 156 patients who had subtotal gastric resection. They state that 19.6 per cent had unsatisfactory results in that they had to remain under medical care, had their working capacity reduced, or had recurrent ulceration or severe dumping. In addition, 13 patients had diarrhea, 39 complained of "small stomach", and 20 complained of inability to hold weight. There were other complications to indicate that the operation of subtotal gastric resection does not restore the patient to perfect health.

Allen and Welch[13] in 1946 reported on a follow-up of 129 patients who underwent gastric resection for duodenal ulcer. Of this group 69 per cent were completely symptom free. Eighteen per cent had some symptoms, while 6 per cent had to remain under medical management, and 9 per cent showed either hemorrhage, severe postresection symptoms, or anastomotic ulcers.

Walters and Lemon[14] in 1940 reported on a series of 212 patients who had been subjected to subtotal gastric resection for either gastric or duodenal ulcer or both. Of this group 83.5 per cent were said to have a good result, 14 per cent were reported to have postoperative nausea but no pain, and 2.5 per cent had recurrence of ulcer symptoms.

Although most authors agree that subtotal gastric resection offers the best results in the treatment of duodenal ulcers which require surgery, it is fairly well demonstrated also that this operation leaves something to be desired. It is our opinion that an ulcer that can be controlled on medical treatment is much to be preferred to the "small stomach" syndrome or any of the other poor results which follow gastric resection in from 20 to 30 per cent of the cases. This factor must be considered along with the additional hazard which we insist must be present in resecting a stomach for perforated duodenal ulcer as compared with a simple closure.

Although a primary gastric resection may be an acceptable procedure in the hands of an experienced surgeon when dealing with a perforated gastric ulcer in an individual whose general condition is good, we believe that this procedure for perforated duodenal ulcers should be reserved for use by those relatively few surgeons who have had truly extensive experience in doing gastric surgery. It seems that to advocate this procedure for use by the average, well-trained surgeon is to invite an increase in the mortality from perforated duodenal ulcer and to make gastric cripples of a certain group of patients who might well have been happily controlled on a medical regime.

SUMMARY

1. A partial review of the recent literature advocating primary gastric resection as the treatment for perforated duodenal ulcer is given.
2. The results in 155 cases treated at the John Gaston Hospital are presented.
3. The reported results in several series of gastric resection are presented.

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A Glaucoma Review

J. E. WILSON, M.D.†
Memphis, Tenn.

Glaucoma is a persistent increase in ocular pressure to the extent that damage to tissues results in visual or visual field loss. The normal intraocular tension or pressure is from 15 to 25 millimeters of mercury. Schiotz is the name of the tonometer most used in measuring the ocular tension. Volume of the intraocular contents at any given time determines the tension of an eye. Aqueous humor is formed by the processes of the ciliary body and flows from the posterior chamber through the pupil into the anterior chamber. At the periphery of the anterior chamber is the filtration angle where the fluid enters Schlemm's Canal, thence into the adjacent veins via the aqueous veins. Abnormal pressure may result from an upset of the delicate balance between aqueous secretion and absorption. Variations in ocular pressure also occur due to changes in blood volume in the intraocular vessels.

The importance of glaucoma as the number one cause of blindness in the United States today cannot be overemphasized. The problem of control in this disease is difficult because of its insidious nature. While the patient is unaware that he has glaucoma, it steals away vision like a thief in the night. Much of the visual field loss is in the area where the fields overlap, thus contributing to late recognition by the patient. Any portion of the visual field, once lost, seldom returns.

One feels fortunate if treatment maintains the vision and visual fields at the same level present when the diagnosis is made. Those most likely to see cases first are the family physician, the optometrist and nurses. They can improve their glaucoma recognition by a better knowledge of the symptoms and by a healthy suspicion toward patients who have any visual disturbances that are obscure in nature. Comparison of the patient's visual field with your own, by the finger movement confrontation test, may bring to light defects in well established glaucoma cases. Headache, pain in the eyes and other glaucoma symptoms resemble other conditions but should at least cause the examiner to consider glaucoma.

One should not speak of glaucoma as being cured but only as being arrested or controlled. Multiple causes and the underlying pathology make it improbable that any specific therapy will come in the near future.

Glaucoma takes on an added significance in Mississippi with its proportionately large Negro population. In the Negro the incidence is greater; his response to medical and surgical treatment is poorer, and through neglect the diagnosis is made later.

No completely satisfactory classification for glaucoma exists but some method to catalogue cases is necessary.

1. Secretory or obstructive. More cases are due to obstruction of the exit of fluid from the eye than those resulting from too much fluid being formed.
2. Primary or secondary. Primary includes cases without any known cause and secondary those in which the cause is apparent.

Regardless of the cause of the increased pressure the pathology of optic atrophy and blindness in glaucoma is always the same. The optic nerve fibers are pressed against the lamina cribrosa and the rigid scleral ring and after much cupping of the disk degeneration results.

Primary glaucoma is divided into two types: 1) narrow angle, and 2) open or wide angle. The gonioscope is an instrument which affords a ready view of the filtration angle in the living eye, thus making possible the differentiation into narrow and open angle divisions.

Congestive and non-congestive are terms applied to glaucoma to denote the degree of vascular embarrassment occasioned by the increased pressure. A sudden rise in pressure or a slow elevation of severe degree will cause an obstruction of the venous outflow from the eye resulting in blood stasis and congestion. Very slow rises in pressure, even to a marked degree, occur without evidence of congestion if the elevation is so gradual that time is allowed for compensatory vascular adjustment.

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†From the Department of Ophthalmology, the Division of Surgery of the University of Tennessee College of Medicine, Memphis, Tennessee

There is no doubt that dilating the pupil, in eyes which have a narrow filtration angle, may precipitate an acute attack of glaucoma. The pupil in dilating crowds the iris into an already narrowed angle, completely blocking it. Acute attacks come on in people over 30 years of age, when the continued growth of the lens has contributed to narrowing the angle by pushing the iris root forward. Persons with vasomotor instability and narrow chamber angles are prone to have acute attacks during emotional stresses such as anger, sorrow or fright.

The eye becomes excrutiatingly painful and is violently congested in an acute attack. Nausea and vomiting in such patients may direct attention away from the eye complaint. The conjunctiva and lids are edematous, the cornea is steamy, the pupil is dilated and vision may be reduced to light perception. Upon feeling such an eye it is stony hard to palpation.

Treatment should begin immediately by instillations of pilocarpine 5 per cent solution every 15 minutes. Morphine should be used to control pain. Surgical relief becomes imperative if the tension has not diminished after four hours and each additional hour of delay lessens the chances of re-establishing a freely filtering angle. Basal iridectomy is the operation of choice in early cases but if the acute attack has lasted longer than 24 hours the filtration angle will be closed by synechiae and iridencleisis will be the proper operation to perform. On a few occasions the writer has used ciliary electrolysis to reduce the tension in acute attacks and later, under more favorable circumstances, performed a filtering type of operation.

Many individuals with narrow angles have mild attacks and repeated episodes. These patients, during short periods when the pressure is raised, complain of headache, cloudy vision, colored halos around lights, slight pain in the eyes, mild ocular tenderness and a sense of tightness about the orbit. The ocular tension is most likely to be high in the evening and during the early morning hours. Attacks are mild and fleeting at first, but the eye, if allowed to continue without treatment, develops so much blocking of the filtration angle that an acute attack is produced.

Diagnosis, in the interval between prodromal attacks when the tension is normal, can only be made by viewing the narrowed angle and by elevations in pressure produced by the provocative test of sitting in the dark for an hour.

Treatment for early cases is 1 per cent pilocarpine solution used twice a day, and must also be used before going to shows or during periods of insomnia when the patient is lying awake in the dark. Peripheral iridectomy is an operation which, if used in early narrow angle glaucoma, affords almost positive protection against ever developing an acute attack. It is worthwhile to advise this operation to patients who are indifferent about carrying out their medical treatment.

The open angle primary cases outnumber by far any other type of glaucoma. Accurate estimates set the blind persons in the U. S. from this type at 30,000 and there may be as many as 800,000 people with this class of glaucoma who are unaware that they have it.

Early recognition can prevent much of this tragic loss in vision. This kind of glaucoma occurs in individuals of the age group 40 and above. Since there are no early symptoms the best way of finding cases is by taking occasional tonometric readings on those in the age group affected. Excessive tearing is one symptom which should arouse suspicion; another is trouble in focusing due to, earlier than expected, loss in accommodation.

Diagnosis must be based on the eye findings because early symptoms are too few and too vague. The optic disc in well established cases shows a cupping and pallor, whereas in early cases it shows nothing and in the intermediate ones there is a crowding of the blood vessels to the nasal side of the disc.

The visual fields change as the condition slowly progresses. The field changes from early in the disease to late are: 1) baring of the blind spot to small test objects, 2) enlargement of the blind spot above and below, 3) extension of No. 2 into a scotoma arching around fixation to the horizontal nasal raphe, 4) peripheral contraction and, 5) central visual loss.

Diagnosis may be established in early wide angle cases with the provocative water drinking test. The pressure is measured after eight hours (overnight) without food or liquid. Then a quart of water is drunk. The tension is measured every fifteen minutes for an hour. A rise in pressure of ten or more mm. of mercury is considered to be a positive test, while normal eyes have only a slight rise.

To gain the patient's cooperation in treatment, a frank discussion of the following points is necessary: that without treatment he will very likely go blind; that frequent observation and faithfulness in treatment will be required for the rest of his life; and, finally, that any time medical treatment becomes ineffectual an operation must be performed.

Pilocarpine drops are prescribed in a one to four per cent solution depending on the severity of the case at the time it is discovered. The number of times a day the solution is used must be adjusted to the patient's needs. Other miotic solutions such as eserine and D.F.P. may be substituted in case sensitivity develops or if pilocarpine becomes ineffectual.

Operative treatment should be reserved for those patients who are losing visual field in spite of active medical treatment. Operations which have been found useful in wide angle cases are corneascleral trephine, iridencleisis, cyclodialysis and cycloelectrolysis. If the eye becomes painful and blind, enucleation or retrobulbar injection of alcohol may become necessary.

Secondary glaucoma cases include those with a known cause such as intraocular inflammatory, trauma, intumescence, exfoliation and dislocation of the lens, ocular and orbital venous thrombosis, intraocular tumors, detached retina, intraocular hemorrhage, choroidal and retinal sclerosis, epidemic dropsy, and finally a special class, the congenital cases. Some of these secondary cases result in the narrow angle type but in the majority of them the angle is open.

The clinical course of secondary glaucoma varies with the ocular disease of which it is a complication. While a patient is under treatment for intraocular inflammation the ocular pressure must be carefully watched and must receive attention if it becomes elevated. A rise in pressure is accompanied by a sudden increase in the patient's pain. Pain may become severe and lead to nausea and vomiting. The conjunctiva is often edematous and the cornea may become steamy. These eyes are quite hard to finger palpation when compared to the examiner's own eyes.

Treatment in secondary glaucoma varies with the cause. In most inflammatory cases the pupil must be dilated. Cortisone may be used locally and by general administration. It helps control the inflammation while the cause is being located and treated. Operation is the proper procedure whenever the tension remains high in spite of medical treatment. Hemorrhagic cases are usually best treated operatively by cycloelectrolysis. Hypermature cataract and intumescent or dislocated lenses, causing glaucoma, must be treated by lens extraction. Secondary glaucoma due to intraocular tumor is usually treated by enucleation of the eye.

Infantile and congenital glaucoma is hereditary in nature and is manifest any time from the first few weeks to the first two or three years of life. More male children are affected than females. Congenital glaucoma is termed hydrophthalmos or buphthalmos.

The pathology is that of blockage of the escape of aqueous humor from the eye. Even though the angle may appear to be open, it is filled with a mesodermal meshwork which ordinarily absorbs during fetal life. Another possibility as to pathology is the partial to complete absence of Schlemm's canal. The disease is almost universally bilateral.

The diagnosis is usually not difficult because the baby's eyes are very large. The corneas range up to 17 mm. compared to a normal of 10 to 12 mm. Infants' eyes are so elastic that they stretch readily under pressure. Haziness of the corneas is due both to edema and to tears in Decemet's membrane. Photophobia is the outstanding symptom. Infants who show a dread of light, even if there is no marked enlargement of the eyes, should arouse the examiner's suspicion when there is no other obvious cause. Congenital glaucoma must be differentiated from megalophthalmos and megalocornea.

Early diagnosis and treatment improve the prognosis considerably. Medical treatment usually does very little good in congenital glaucoma. Almost one hundred per cent of the cases must be operated upon. In recent years, goniotomy operation has been used to clear the filtering angle of the obstructing tissue. In cases due to absence of Schlemm's canal some type of filtering operation must be done. The good operative results in congenital glaucoma could be made even better if cases were discovered earlier. Cyclodialysis or cyclodiathermy may be used to decrease the amount of fluid formed. These operations are particularly useful where gonitomy has been only partially successful.

In the writer's opinion state legislatures should allocate some public health funds for case finding and glaucoma control. It would be better to spend some money in prevention and have fewer blind pensions to pay.

One of the main needs in a STOP GLAUCOMA campaign is education to make people aware of the disease and its symptoms, and to familiarize them with services available as those suggested below. Nurses of the health departments could be trained in glaucoma recognition and do case finding work along the lines used in tuberculosis and in field work in other diseases. If necessary, some extra nurses should be employed. Glaucoma clinics could be held once a month in the county seat of each county and occasional meetings be held in the surrounding towns. At such clinics a physician, qualified in glaucoma diagnosis, could meet the nurse and examine the suspects which she had found. From these clinics the cases would be referred to an ophthalmologist. Such a program would bring under control a host of cases who do not at present realize they have the disease. Reporting of glaucoma cases by physicians and follow-up visits by the nurses could be worked into such a program. By making this kind of program an additional function of the health departments, the expense would not add markedly to their budgets. The dividend in human happiness, resulting from added years of visual preservation in so many people, would justify this program.

899 Madison Ave.

Surgical Diseases of the Thyroid

Some Comments on the Changing Scene

JAMES D. HARDY, M.D., F.A.C.S.†
Memphis, Tenn.

The purpose of this discussion is to emphasize certain of the more recent advances in the management of thyroid conditions encountered in surgical practice.

The topics considered are:

- I. HYPERTHYROIDISM
  - a. Etiology
  - b. Radioiodine vs. surgical therapy
  - c. Antithyroid drugs
  - d. Thyroid crisis and the adrenal cortex
  - e. Exophthalmus: etiology and management
- II. THYROIDITIS
  - a. Management with ACTH and cortisone
- III. THYROID CARCINOMA
  - a. Radioiodine therapy
  - b. Surgical management

HYPERTHYROIDISM

Etiology. Although psychologic factors are among those long suspected, the etiology of this condition remains obscure. Most observers believe that the increased elaboration of thyroid stimulating hormone (TSH) in Graves' disease is stimulated by way of the hypothalmus.

In the investigation of the primary cause of hyperthyroidism, more attention is being given to the relation of thyroid physiology to that of the other glands of internal secretion, particularly the pituitary and the adrenal cortex. The fact that hyperthyroidism may follow the treatment of obesity with desiccated thyroid substance has led some to suggest that, during hormone therapy, the secretion of TSH is suppressed, only to be followed by a period of hypersecretion when thyroid therapy is discontinued. Yet, this mechanism does not account for all cases, since hyperthyroidism may also develop in patients taking only modest doses of thyroid substance and since it may become apparent prior to the discontinuance of therapy[1]. In either event, the hyperthyroidism initiated in this manner is frequently of the pituitarigenic type, associated with the early development of ophthalmopathy and other complications[2]. This suggests that thyroid therapy upsets the control of TSH secretion in some manner. Unfortunately, the cause or precipitating cause of hyperthyroidism in the usual case seen in practice is unknown, even though a stressful situation can occasionally be uncovered.

Radioactive vs. Surgical Therapy. The value of radioiodine in the diagnosis of hyperthyroidism is accepted. Since the uptake of this radioactive element by the thyroid gland, the measurement of the serum level of protein-bound iodine (representing the circulating level of thyroxine and related compounds), and the measurement of the basal metabolic rate measure three different facets of thyroid function, each has an important use under particular diagnostic circumstances[9].

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†Department of Surgery and Surgical Laboratories, Medical College of the University of Tennessee, Memphis.

However, the precise role which radioiodine will ultimately attain as a treatment for hyperthyroidism has not yet been determined. Although very large numbers of patients have now been treated and their thyroid activity reduced to normal or subnormal levels by the administration of I_{131}, one has but to poll a group of endocrinologists to learn that a very considerable percentage of them would prefer surgical therapy to radioiodine were they themselves to have hyperthyroidism. The reason for this is, of course, that the time which has elapsed since radioiodine became readily available for therapy (approximately ten years) has not been sufficient to permit the appearance of cancer, if the small amounts of radiation which the thyroid receives from the relatively short half-life of I_{131} is sufficient to produce malignancy. In man from fifteen to twenty years are usually required for the appearance of malignancy in the presence of chronic irradiation. That cancer can be produced by radioactive iodine has been demonstrated in rats by Goldberg and Chaikoff[6]. Nevertheless, these workers were using very large doses of radioiodine, far in excess of what the human patient would receive.

The views of the writer coincide very closely with those recently expressed by Rawson[16], whose extensive experience with the use of radioiodine qualifies him to speak with authority. In his opinion radioactive iodine should not be administered for hyperthyroidism to patients under the age of from forty-five to fifty years with uncomplicated Graves' disease. This form of treatment can be justified in patients past middle age, or in younger patients whose disease is recurrent, or is complicated by severe or progressive exophthalmus or factors which make the patient a poor surgical risk. If at the end of another decade we can state that radioiodine in the doses used in the treatment of Graves' disease is not carcinogenic, we might justly adopt a more liberal attitude toward this non-surgical treatment of hyperthyroidism.

The treatment of nodular toxic goiter with radioiodine is less satisfactory than is the treatment of diffuse toxic goiter, and we believe that most nodular toxic goiters should be prepared for surgery with antithyroid drugs or iodine and then excised.

ANTITHYROID DRUGS. Prophylthiouracil is still probably the most commonly used of these agents, but itrumil and tapazole have gained considerable favor also. Recently Bartels[1] of the Lahey Clinic has reported upon his experience with an even newer antithyroid compound entitled neomercazole. This drug has a structural formula which is similar to that of tapazole. The dose of neomercazole for effective antithyroid action is similar to the effective dose of tapazole, namely, 30 to 50 milligrams daily, depending upon the type and size of the goiter under treatment. The side effects during the administration of neomercazole were found to be similar to those seen during the administration of tapazole. Three unfavorable reactions occurred in the fifty-two patients who were given treatment, an incidence of 5.7 per cent. Of the two skin reactions which occurred one was quite severe but the other was not sufficiently severe to necessitate complete withdrawal of treatment. In the third case agranulocytosis developed on the twenty-fourth day of treatment, though recovery followed the withdrawal of the drug and the use of antibiotics. Despite its strong antithyroid qualities, neomercazole is still not the ideal drug, in view of the seriousness of agranulocytosis when it does occur.

In our practice we still depend heavily upon prophylthiouracil with or without the administration of iodine for several days before operation. Furthermore, we feel that the value of a short course of iodine therapy alone in a patient whom one wishes to prepare quickly for operation should not be lost sight of in this day of many new antithyroid preparations. When a patient has not improved with sufficient rapidity upon prophylthiouracil therapy, we have usually shifted to tapazole. One of our colleagues, Dr. Robert M. Miles[13], and his associates have been conducting a comparative study of the antithyroid properties and efficiency of tapazole, itrumil (which contains iodine), and propylthiouracil. Although the short duration of the study does not permit final conclusions, it is his impression that tapazole is an effective antithyroid agent in more patients than are the other drugs; furthermore, this drug is often effective in patients in whom the other drugs are not satisfactory. Finally, patients prepared with tapazole are ready for operation more quickly than those who are prepared with propylthiouracil.

THYROID CRISIS AND THE ADRENAL CORTEX. Some years ago it was discovered by Rawson and Means[15] at the Massachusetts General Hospital that patients in thyroid crisis responded dramatically to the administration of large doses of adrenocortical extract. More recently Szilagyi, McGraw, and Smyth[15] and others[8,10] have examined the relationships which exist between the administration of ACTH, cortisone, or adrenocortical extract and thyroid function. Szilagyi and his associates examined the clinical effects of the administration of ACTH in three cases of severe thyrotoxic crisis that had been unresponsive to other measures, and in five cases of hyperthyroidism, four due to Graves' disease and one to adenomatosis goiter, that had presented unusual difficulties in preoperative preparation. The effect of ACTH in thyrotoxic crisis seemed to have been beneficial. All three patients recovered. In hyperthyroidism the condition was only moderately or slightly improved, and this is in accord with our findings with the use of ACTH in one patient and cortisone in another in preparation for subtotal thyroidectomy. Thus, ACTH does not seem to offer any useful addition to the current methods in the medical treatment of hyperthyroidism.

EXOPHTHALMUS: ETIOLOGY AND MANAGEMENT

For many years it has been known that anterior pituitary extracts when injected into animals produce hyperplasia of the thyroid and exophthalmus. Owing to the frequent coexistence of these two features in patients with Graves' disease, it has been generally assumed that the hyperplasia of the thyroid and the exophthalmus in the experimental animals were caused by the same pituitary factor (TSH). Nevertheless, most clinicians have observed cases of hyperthyroidism without exophthalmus and, though less frequently, the opposite relationship; that is, the presence of exophthalmus without hyperthyroidism.

In 1946 Dobyns[3] reported on the exophthalmus-producing activity of a variety of TSH preparations, and it was noted at that time that certain extracts produced far more hyperplasia than exophthalmus and that other extracts produced much more exophthalmus than hyperplasia of the thyroid. More recently, Dobyns and Steelman[3] have published work from which they conclude that they have separated the thyroid stimulating hormone (TSH) in the pituitary extract from the exophthalmus-producing substance (ETS). These two substances were separated by their differential solubility in trichloracetic acid. Using fish or day-old chicks, these workers were able to produce either exophthalmus or thyroid hyperplasia at will.

If these observations of Dobyns and Steelman can be confirmed in other laboratories, several perplexing problems associated with exophthalmus may be clarified[18]. Some of these problems are that: 1. Exophthalmus may occasionally precede the development of hyperthyroidism by several months. 2. Exophthalmus may appear or increase when the basal metabolism has been reduced to a normal or subnormal level by appropriate treatment(though such treatment does not necessarily reduce the output of TSH by the pituitary). 3. Exophthalmus may be the only manifestation of exophthalmic goiter syndrome that ever appears in a given patient.

The management of progressive ("malignant") ophthalmopathy can present one of the most difficult therapeutic challenges in medical practice. Measures designed to control hyperthyroidism associated with the exophthalmus in Graves' disease frequently stimulate the secretion of TSH and, concurrently, the eye manifestations may be increased, though, as previously noted, they may be produced by a principle separate but functionally related in its production to the production of TSH.

Ideally the therapy of such patients should be so designated as to allow for elasticity in management, depending on whether the hyperthyroidism or the ophthalmopathy represents the greater threat to the patient. Antithyroid drugs have the advantage that they can be discontinued should eye signs rapidly progress, but they have not generally resulted in satisfactory management of exophthalmus. Radioiodine therapy has not been used extensively and has the same theoretical objection as does subtotal thyroidectomy. The latter is equivalent to "burning one's bridges behind oneself."[4] This is because the exophthalmus may progress rapidly following thyroidectomy. However, an occasional case responds well to thyroidectomy. The use of thyroid substance or of radiotherapy to the pituitary to suppress the secretion of TSH has not been particularly successful, although in some cases the eye symptoms have been improved by either one therapy or the other or by both in combination. The exophthalmus itself may not improve even when the eye symptoms are greatly relieved. Radioiodine therapy is being utilized and deserves further trial in this condition.

Since the administration of ACTH or cortisone results in the suppression of endogenous production of ACTH by the pituitary, it was hoped that the suppression of this pituitary activity might result also in the suppression of the elaboration of thyroid stimulating hormone, in favor of which hypothesis there has been some evidence[10]. However, in our experience and in the experience of others which is known to us ACTH or cortisone therapy has not been particularly effective in the management of progressive exophthalmus.

It has been noted further by Engel[4] that it is questionable whether any therapeutic régime designed to modify pituitary or thyroid function really influences the course of the ophthalmopathy, once it has been initiated. It is possible that the natural history of this malady is such that it proceeds to a certain point and then regresses spontaneously. In many cases the process stops short of serious damage to the eye and in these cases success is likely to be credited to previous therapy. In other cases the exophthalmus proceeds relentlessly to an extreme degree and orbital decompression becomes imperative if the eye is to be saved.

THYROIDITIS

Numerous reports have not appeared in the literature concerning the efficacy of ACTH and cortisone therapy in the management of subacute and chronic thyroiditis (Hashimoto). In 1951 Werner, Hamilton, and Franz[20] reported upon the use of ACTH in the management of Hashimoto's struma. This hormone produced an alteration in the characteristics of the gland to palpation and produced a definite decrease in the lymphocytic infiltration in three patients. There was noticed further a decrease in the cutaneous myxedema during ACTH therapy and a prompt recurrence when treatment was stopped. Incidentally, ACTH produced an increase in the basal metabolic rate apart from the change in the level of thyroid activity in either hypothyroidism or hyperthyroidism.

More recently Lasser[11] has reported upon the use of cortisone in subacute thyroiditis and has found a marked improvement in this condition.

THYROID CARCINOMA

Radioiodine Therapy. The management of cancer of the thyroid with radioactive iodine is limited by the fact that cancers of this organ do not possess the natural avidity for iodine which is characteristic of normal thyroid tissue. Fitzgerald and Foote[5] found that the thyroid cancer did concentrate measurable amounts of radioiodine in forty-three per cent of a large series of thyroid cancers studied by the autoradiographic technic. However, none of these tumors concentrated more than a small fraction of that retained by the surrounding normal tissue. Rawson, Rall and Peacock[17] found that more than fifty per cent of patients having cancer of the thyroid metastatic to the lungs or to the skeleton, when subjected to total thyroidectomy or destruction of the normal thyroid with radioactive iodine, assumed an increased capacity to concentrate radioiodine. Following total thyroidectomy, more than seventy per cent of such patients when subjected to prolonged treatment with thiouracil or mercaptoimidazole assumed a maximum capacity to concentrate radioactive iodine[11]. In this way it has been possible to administer doses of radioactive iodine great enough to produce cancericidal effects without irreversible ill-effects to the nonthyroidal tissue.

Objective evidence of tumor destruction has been observed in patients treated in this manner. The writer has observed two patients in whom extensive chest metastases from thyroid cancer literally melted away under therapy with radioactive iodine following total thyroidectomy when the patients were placed on propylthiouracil therapy[7]. Nevertheless, there are no known patients who can be regarded as finally and definitely cured as the result of treatment with radioactive iodine.

In summary, radioactive iodine therapy can be viewed as merely palliative in thyroid cancer. If the disease is localized, it should be resected surgically.

SURGICAL MANAGEMENT OF THYROID CARCINOMA

An important concept which should further influence the management of thyroid cancer is that presented by McDonald and Kotin[12]. They have presented data which show that thyroid carcinoma in one lobe may metastasize to the other lobe or to nodes on the opposite side of the neck. Therefore, the thyroid gland should be considered as a single functional unit, so far as cancer and lymphatic drainage is concerned, and a total thyroidectomy should be done if cancer is found, rather than ipsilateral lobectomy with radical neck dissection.On the basis of their experience, McDonald and Kotin suggest the following therapy in these specific situations:

1. A thyroid tumor is present with no clinical evidence of lymphadenopathy. Excision of the tumor with a reasonable margin of adjacent thyroid tissue is done and, if an expert pathologist

is available, the diagnosis can usually be made from frozen section, as is done in tumors of the breast. Lacking a rapid frozen section, or if the frozen section is equivocal, further action is deferred pending diagnosis by paraffin sections, which should be available in twenty-four to forty-eight hours. If the lesion is a carcinoma, an extracapsular total thyroidectomy is done with a regional dissection in the thyroid area on both sides of the neck, from internal jugular on one side to the internal jugular on the other side. The specimen should be searched for parathyroid glands, which if found are implanted in muscle tissue.

2. There are evident lateral node metastases with or without an apparent primary lesion in the thyroid gland. When one of the involved nodes is biopsied, a rapid frozen section is done. If metastatic carcinoma of thyroid origin is demonstrated, and if there is unilateral cervical node involvement, radical block dissection of the neck is done on the involved side, with resection of the sternocleidomastoid muscle and internal jugular vein, the dissection including the entire anterolateral triangle of the neck, with the exception of the submaxillary area, and including that of the adjacent portion of the posterior cervical triangle, particularly in the lower third. The operation is completed by a total extracapsular thyroidectomy, and dissection of the adjacent nodes on the contralateral side as far as the opposite carotid sheath.

That lymphatic drainage readily extends from one side of the neck to the other was brought home to the writer some months ago during the excision of a cystic hygroma of the neck which extended with many ramifications into the opposite side of the neck over, beneath, and below the thyroid gland. We would endorse the recommendation of total thyroidectomy and radical neck dissection on a side with involved nodes. There are many who would recommend going still further, namely, a total thyroidectomy with a bilateral formal radical neck dissection.

One thing certain and this is that the present time surgery represents the best treatment for cancer of the thyroid gland. Moreover, since papillary adenocarcinoma of the thyroid gland is slow growing and not highly malignant, this should be a cancer which is curable by early and definite surgical attack. In our practice we commonly follow the surgical procedures with regional roentgenotherapy, for these cancers are comparatively sensitive to irradiation.

CONCLUSIONS

1. The etiology of hyperthyroidism remains obscure, but the hypothalmic-pituitary mechanism is under suspicion.
2. Subtotal thyroidectomy is probably preferable to radioiodine in definitive management of nodular toxic goiters and of uncomplicated diffuse toxic goiters in patients below the age of forty-five. Thyroid cancer has been produced in rats by massive doses of radioiodine.
3. Thyroid crisis may be in effect a state of adrenocortical insufficiency. This condition has been found to respond dramatically to large doses of adrenocortical replacement therapy.
4. It appears that in Graves' disease the exophthalmus and the hyperthyroidism may be produced by separate pituitary hormones.
5. Thyroiditis of the subacute and chronic forms has been successfully managed with ACTH and cortisone.
6. Thyroid carcinoma in one lobe may have spread to the opposite lobe and to the lymph nodes on the opposite side of the neck. A total thyroidectomy should routinely be done for this disease, accompanied by bilateral neck dissection as indicated.

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The Medical Service Pharmacist and the Professional Detailman -- Sources of Valuable Information

T. A. NOONER†

DURING the early years of this century drugs and allied products were generally fixed or stable. Only a very few prescription specialists as we know them today were in existence and the antibiotics, vitamins, and many of our complex medical chemicals had not been discovered. The successful physician could easily keep up to date on the latest accepted and best recognized medicines because he had been well instructed on them in medical school and his reference and textbooks carried full data on the drugs of his choice. He was able to write his prescriptions with knowledge and understanding and give his patients the benefit of the most improved care and treatment of that period. It is a difficult story today due to the wide influx of new complex medicinals and products of the past decade or two which has practically wiped out the fixed or stable medicines of those years.

The discoveries and improvements in the medical and pharmaceutical fields today are so sweeping that even the physician who has been out of medical school only a very short time finds it difficult to keep abreast with the developments regardless of how anxious he may be to give his patients the benefits of the latest and most improved medicine. He is faced with problems and responsibilities unknown to his predecessor and high among these is how to find the time for the necessary study to gain adequate knowledge on these new medicinals whereby he can prescribe them with understanding. He must be as familiar with these more complex medicinals as his predecessors were with the simpler drugs of their day. For him to know the name, action, and dosage of a drug is not enough. He must know its antidote, contraindications, side actions, incompatibilities, toxicity, etc., if he is fully to protect the health and welfare of the patient. Let us keep in mind that the teachers of his predecessors, as his own, were educated and professionally trained yet they too were not permitted to assume their responsibilities until after they had been examined and licensed. Their diplomas, state licenses, certificates of membership in recognized associations and societies, and their professional reputations evidenced their qualifications. The rightfulness of such requirements goes without question; nevertheless, is it not as important that the source of information on these new and more complex medicinals emanate from those whose educational qualifications have been likewise established and recognized? These newer drugs are the ones being prescribed today; in fact, according to an authorized survey, more than 85 per cent of the prescriptions now being written are for drugs that were unknown 15 years ago. This statement becomes still more startling when one recognizes that practically every physician who prescribes them finished school prior to the introduction of one or more of them. Thus, the physician who would keep abreast with the latest and most improved care and treatment is forced to give much of his time and thought to the study of these newer medicines and their application. The volume of written data on the values and proper uses of many of these drugs is so massive that it is the rare physician indeed who can give the necessary time to familiarize himself with them. In many instances this problem of finding the time for study becomes such a burden that he may find it necessary to use the older and less effective drugs or prescribe the newer and improved ones more upon general opinion rather than on personal knowledge. It is here we begin to realize the important part and the scope of influence the medical service pharmacist and the professional detailman have on the medicines prescribed today. A recent survey by the American Medical Association shows that 44 per cent of the physicians of this country get their information on these drugs from detailmen. In the North and South Central States and in New England more than 50 per cent of the physicians depend upon detailing for new product information. By virtue of their training and profession, the medical service pharmacist and the professional detailman must know drugs and their actions. In fact, they are forced by duty and responsibility to keep abreast with the development of the new ones and they labor diligently to this end.

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†Representative of Bilhuber-Knoll Corporation, Orange, New Jersey.

Medical service pharmacy and professional detailing have so much in common that they are looked upon as a specialized branch of pharmacy. The medical service pharmacist, as the professional detailman, is qualified to impart reliable information on drugs and their actions with understanding and to do so in a clear and concise manner. Through their knowledge of drugs, they conserve the physician's time and give him factual information. Although it is not yet generally recognized, the medical service pharmacist and the professional detailman are the backbone of able detailing and are destined to become more so as their effective work is recognized. Fortunate indeed is the physician who has the aid and support of a reliable and thoroughly dependable medical service pharmacist, one who keeps abreast with the progress of both medicine and pharmacy, likewise, is the physician who takes full advantage of the aid and support available to him through capable and well-trained professional detailmen. Consultations with both the medical service pharmacist and the professional detailman should be still more firmly established by the physician who strives to keep abreast with the latest developments on the drugs he prescribes. By so doing he broadens his knowledge of these drugs, permitting him to give his patients the benefits of the most improved and modern treatment.

The progress made in both medicine and pharmacy affects the medical service pharmacist and the professional detailman as much as, if not more, than it does the physician. They are duty bound and obligated to be so well versed on these new discoveries and the older drugs that they are able to impart the needed information within the shortest time and to do so without sacrificing any vital points so necessary for a clear understanding of them. Thus, it is readily apparent that without the proper educational background neither a medical service pharmacist nor a professional detailman would be able to comprehend and explain satisfactorily the many pertinent points that have a direct bearing on the drug in question. They must be reliable men whose integrity is above reproach and whose first purpose is to serve well. Their code of ethics must be in keeping with those of their allied professions. Most physicians recognize and respect these principles and qualifications as essential attributes of the medical service pharmacist and the professional detailman and welcome their visits. In the language of one physician, "Calls of the able detailman is a matter not to be lightly dismissed . . . Most of them are gracious pharmacists educated on a collegiate level in the basic medical sciences and are, therefore, able to discuss scientific problems with understanding." Another has said, "I expect the pharmacist to be as well qualified in his profession as I am in mine. I like to recognize him as a co-professional."

The seriousness with which pharmacy looks at this need for more and still better qualified medical service pharmacists and professional detailmen is further evidenced by the attention and interest our schools of pharmacy are giving to this matter. Most of these schools are actively seeking a way by which they will be able to meet the demands that are bound to be made of them in this regard. They know that a foundation for such qualified men is their responsibility and to this end, they seek a means whereby an effective course on medical service pharmacy and professional detailing can be included in their curricula. Some colleges of pharmacy now give elective courses on detailing and sales. Already one, the University of Tennessee School of Pharmacy, includes a course on medical service pharmacy and professional detailing in its curriculum and gives full credit for the subject. The prime objective of the course is to prepare the student better for a fuller professional life as a pharmacist and to equip better the one who will enter the professional detail field. Effort is made to give him a clearer outlook on his professional relations with and responsibilities to medicine, dentistry, veterinary and allied professions, including his own, regardless of whether he will practice pharmacy, enter the professional detail field, or teach in a school of pharmacy. By having a fuller appreciation of the position his profession holds among those allied with his own, he is able to broaden his field and contribute still more to those he serves. Thus, there are just reasons for seeking the endorsement and help of those in medicine, pharmacy, and their allied professions for better qualified men in the detail field. One physician has pointed out, "The physician will be doing both himself and the bona fide detailman a service by actually weeding out those who consume his time to no advantage."

One of the greatest helps the physician can give to medical service pharmacy and professional detailing is to classify each one who calls upon him by his ability, character, education and service rendered. In so doing he exercises his best opportunity to have a part in advancing the standards of medical service pharmacy and professional detailing.

BOOK SECTION

INSTALLMENT 8

Atlas of Rush Pin Technics

LESLIE V. RUSH, M.D.
Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

This is the eighth of a series of monthly installments to be published in *The Mississippi Doctor* during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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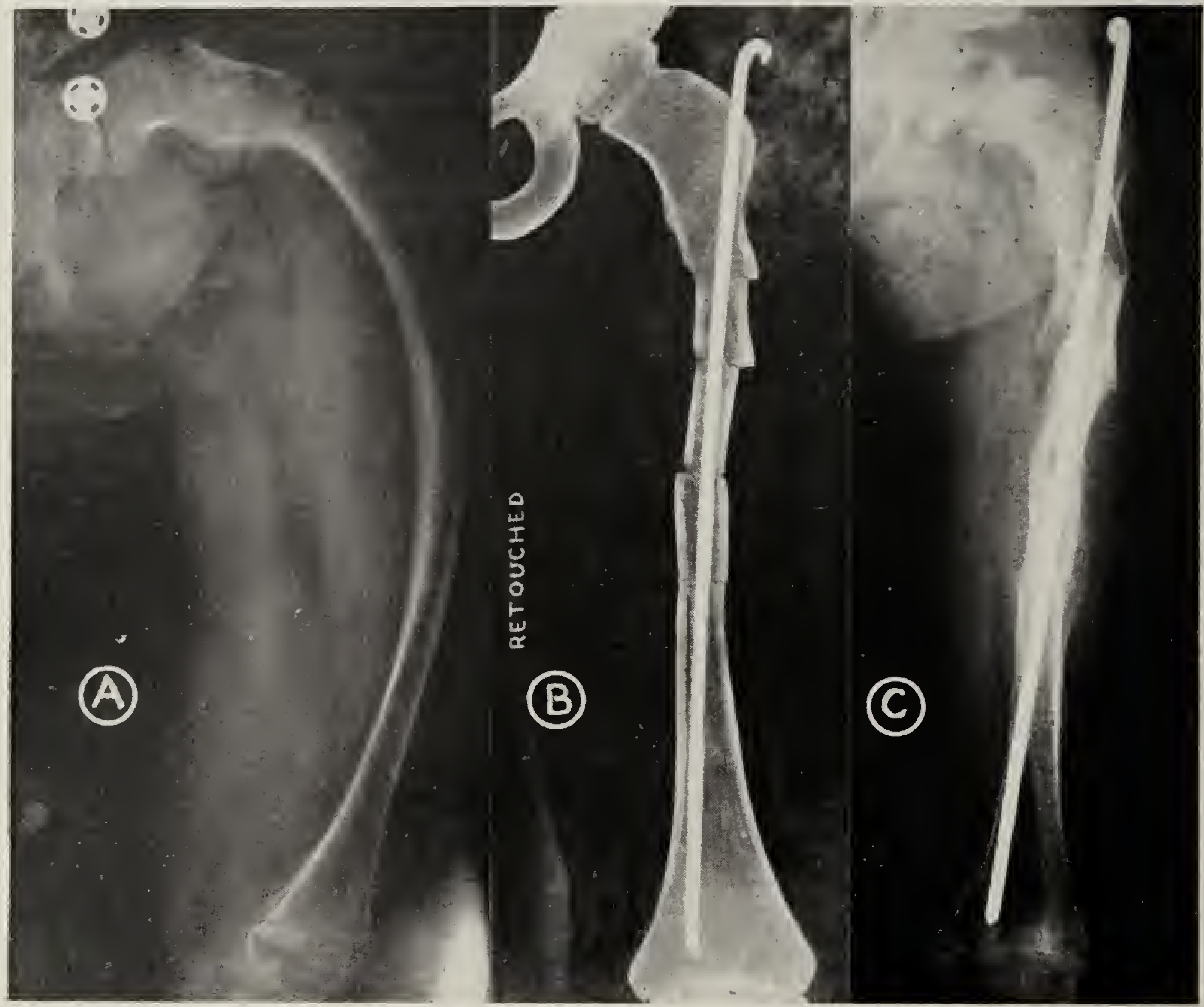


(*A*) *Fragilitas ossium in a 5-year-old boy. Both thighs exhibited marked antero-lateral bowing with recent femoral fractures.*

(*B*) *Immediately after multiple, spool-type osteotomies and pinning. Operation done on both thighs and double hip spica applied. Film retouched to show detail.*

(*C*) *Degree of healing at 5 months.* (*Courtesy Dr. Nicholas Giannestras, Cincinnati, Ohio*).

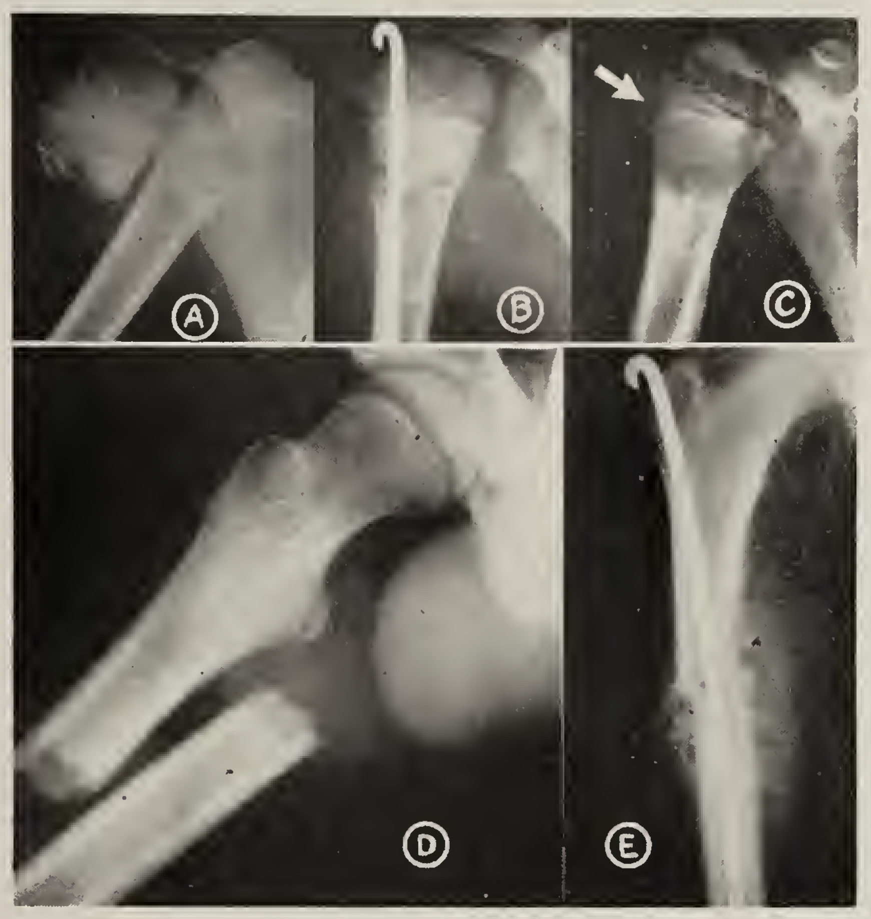
Brittle Bones

Osteogenesis imperfecta or fragilitas ossium is a condition primarily of childhood and adolescence in which the long bones are subject to repeated fractures. This may result from minor trauma because the cortex of the bone is extremely thin. Tendency to fracture lessens when full growth is attained, but by then marked curvature of the bones has occurred. This is especially true of the femur.

This problem has been approached most uniquely by Dr. Nicholas Giannestras who has pinned both femurs in two such cases, one of which is shown here.

The case above had suffered 14 previous fractures. The pins are to be worn until full growth has occurred. The pins will be replaced by longer ones as growth dictates.

In a bone of this sort migration of the pin could become a problem. If the head is set snugly against the thin cortex, the pin could conceivably migrate into the bone. On the other hand if the head is too prominent, it might migrate upwards from the motion of the soft tissues.



(A-C) Partial obliteration of upper humeral epiphysis, six months following medullary pinning. (Child, age 8 years).

(D-E) Fracture upper third of femur showing healing at 4 weeks. Age 15 years. Note pin passed through trochanteric epiphysis. Main growth of thigh is from lower femoral epiphysis which should not be unnecessarily traversed by pin.

Influence of Age

SMALL CHILDREN: An epiphyseal line should never be crossed with a pin without surgical justification. In two instances we have seen epiphyseal lines close following pinning.

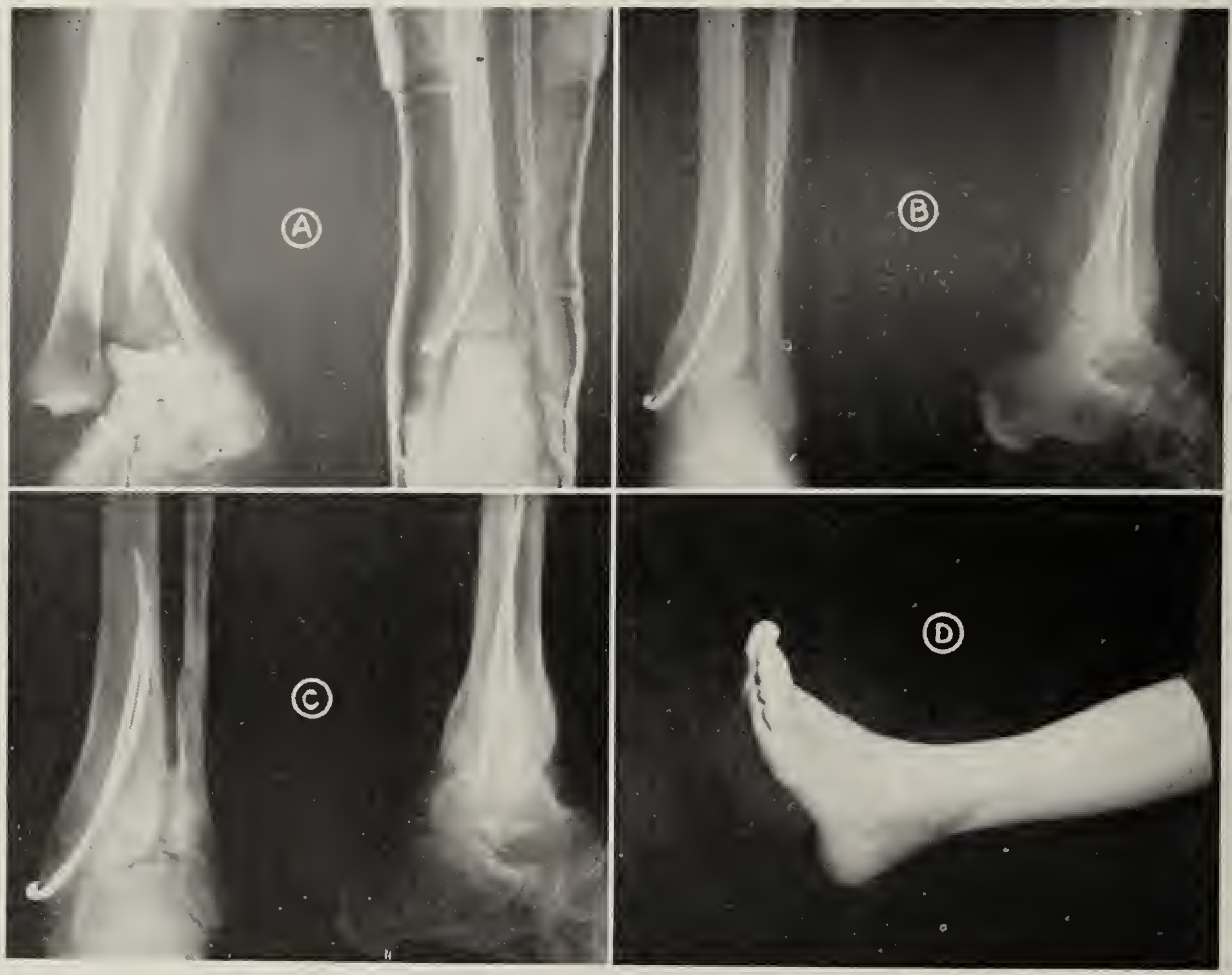
Nature does an excellent reconstruction job in repairing fractures of children. Healing is rapid and loss of function is quickly overcome. Angulation is usually corrected and shortening of an extremity is often overcome within one year after the fracture.

Shaft fractures of small children are very rarely an indication for pinning. Compound fractures and certain femoral shaft fractures are the exceptions. Fractures near or involving joints which cannot be handled by simpler methods should be pinned to prevent deformity even if the epiphyseal line must be traversed. The pins should of course be of small diameter and be removed as soon as healing will permit.

ADOLESCENTS: The epiphyseal line is of less importance in those who have attained most of their ultimate growth. Consequently, the indications in adolescents become much broader than in small children. The simplicity of semi-open reduction makes it a rational procedure in many shaft fractures. The pin should of course be applied in such manner as to avoid growth disturbances when possible.

ADULTS: Young adults afford the best field of application. The cancellous bone is firm, fixation is usually stable and immediate function can be permitted.

OLD AGE: This is the most definite age indication. Early function can usually be enjoyed. Removable plaster splints may be necessary for security of fixation, because the cancellous bone is thin and fixation is less secure.



(A) Compound fracture-dislocation of ankle before and after emergency surgery. Primary healing.

(B) At 6 months bone absorption occurring at tibio-fibulal junction. Painful on weight bearing.

(C & D) Appearance at one year. Chip bone graft done at six months. Female, Age 30.

Compound Fractures

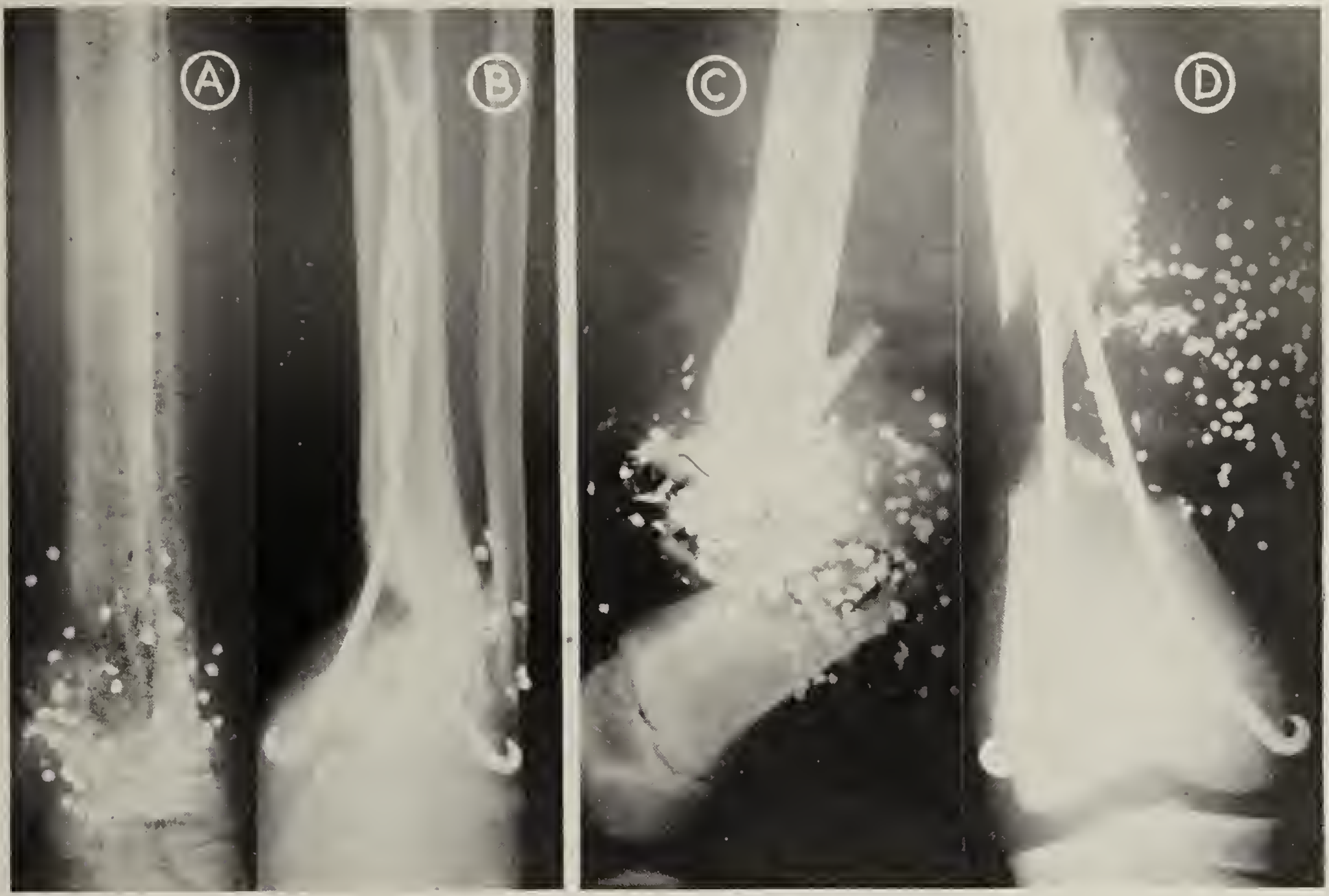
Pinning is almost routinely indicated in fresh compound fractures, not only to maintain the bone reconstruction but to mitigate against infection.

Chemotherapy is of definite value but cannot substitute for careful and meticulous surgery instituted early.

Definitive surgery here means:

1. Shaving the extremity.
2. Scrubbing with soap and water.
3. Irrigation of wound copiously with normal saline solution.
4. ADEQUATE DEBRIDEMENT.
5. Reduction and pinning of fracture.
6. Reconstruction of soft tissue envelope. Do not leave bone exposed if it can be covered. Do not leave pockets for blood accumulations in soft tissue.
7. KES dressing (Kerlix gauze, elastic bandage, plaster splints). Temporary splinting of the soft tissues with compression dressing prevents excessive fluid accumulations, minimizes infection danger and encourages healing.

In old compound fractures pinning should be used cautiously and as a closed procedure if possible. Infection can be more satisfactorily handled if the bone is immobilized in this manner and subsequent dressings are made infinitely easier.



(A-B) Gunshot wound of ankle with enormous tissue destruction. After extensive debridement huge hiatus was created. Double curved pins maintained length and stabilized distal fragments. Healing at one year (B). Soft tissue now in good condition.

(C-D) Gunshot wound of thigh which required amputation through fracture site on tenth day because of arterial gangrene foot and leg.

(D) X-ray made day of amputation. Note how length has been maintained.

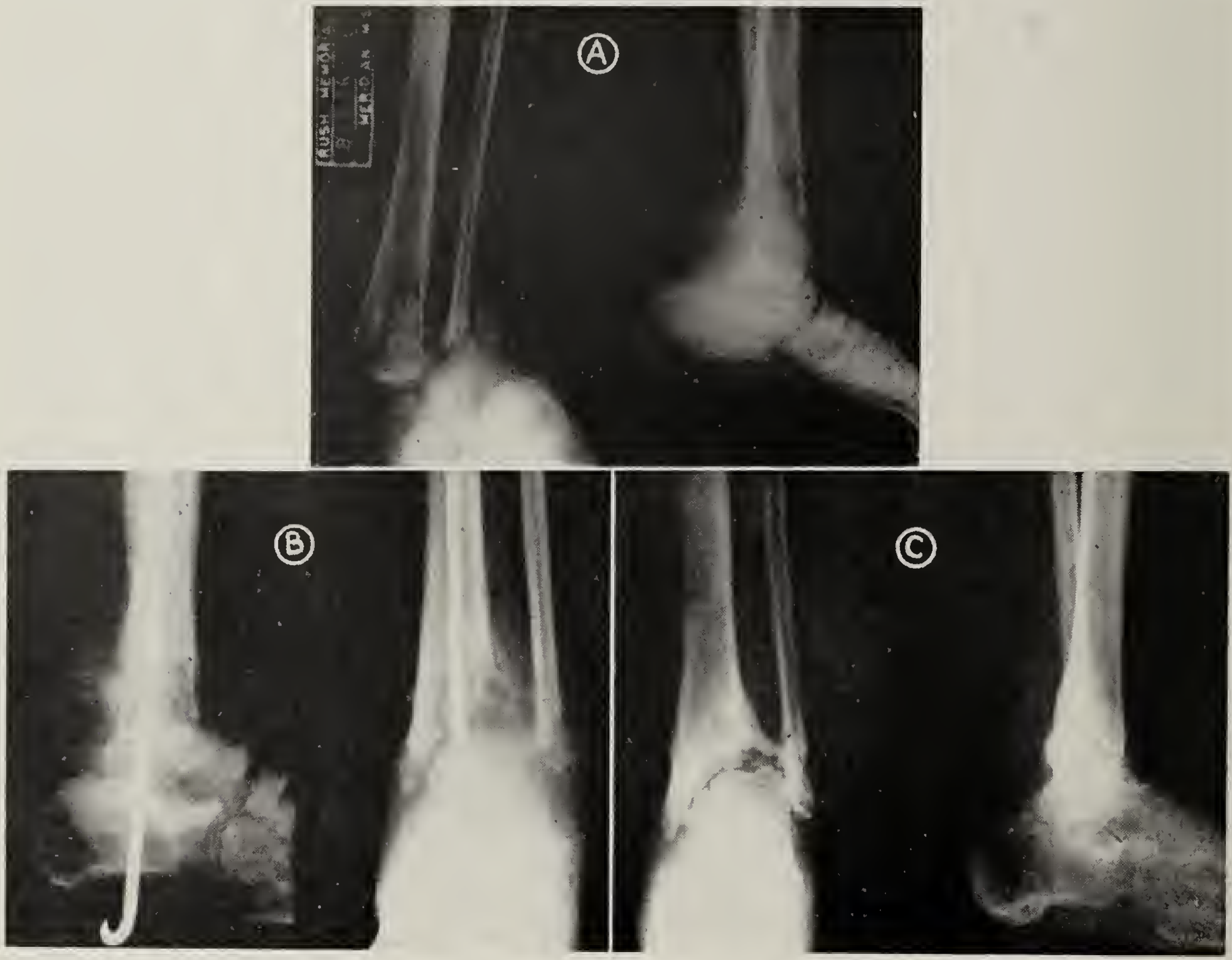
Gunshot Wounds

The extensive débridement required by wounds of this type leaves a huge defect of both bone and soft tissue. If débridement is not adequate infection becomes a problem to reckon with. As in other compound fractures danger of infection can be markedly lessened by thorough immobilization of bone and soft tissues.

In one case above (C-D) had there been adequate arterial circulation to the distal portion of the extremity, further reconstructive surgery would not have been difficult. After débridement the cavity in the thigh had been packed with dry gauze.

On the tenth day, that of amputation, the cavity was clean and granulating. It appeared ready for packing with chip bone grafts. The bone interval was satisfactorily maintained by the curved pins. This interval could have been increased or decreased by the degree of curve given the pins.

When the defect involves the shaft, it may be impossible to prevent telescoping of the bone on the pin to produce shortening. These cases require prolonged treatment and frequent dressings. Pinning makes it possible to maintain alignment of the proximal and distal fragments and simplifies the local care of the wound. Skeletal traction is also necessary to maintain length in such cases until bone grafting becomes feasible.



(A) Neglected compound fracture-dislocation ankle. Four months after injury. There were draining sinuses with much bone necrosis.

(B) After removing the necrotic bone, ankle region was too flail for satisfactory immobilization in plaster alone. Pin driven through foot, across ankle region into medullary cavity of tibia. Pin was well tolerated for 5 months when it had to be removed because it migrated through sole of foot.

(C) Same case at 13 months. Weight bearing caused surprisingly little pain. Fusion may become necessary.

Infection

The gravity of bone infection should not be minimized. It can become a serious problem. Fortunately, in this series of cases it has been a relatively minor factor. Our experiences in this regard lead us to certain opinions at the present time which are cautiously expressed because they are subject to change by future experiences.

1. An infected recent fracture appears more easily controlled if the bone has been stably transfixed with a medullary pin.

2. If an infection occurs it tends to be locally limited to the fracture site unless there is motion of the pin within the bone.

3. The marrow cavity appears much less susceptible to infection than previously believed.

4. If signs of infection or inflammation occur after healing is relatively secure, the pin should be removed to eliminate any possible foreign body reaction.

5. If signs of infection occur before relatively secure healing, the pin is probably an asset rather than a liability and should not be removed. At least, its removal should be postponed until after a trial of rest, elevation, chemotherapy and drainage if necessary.

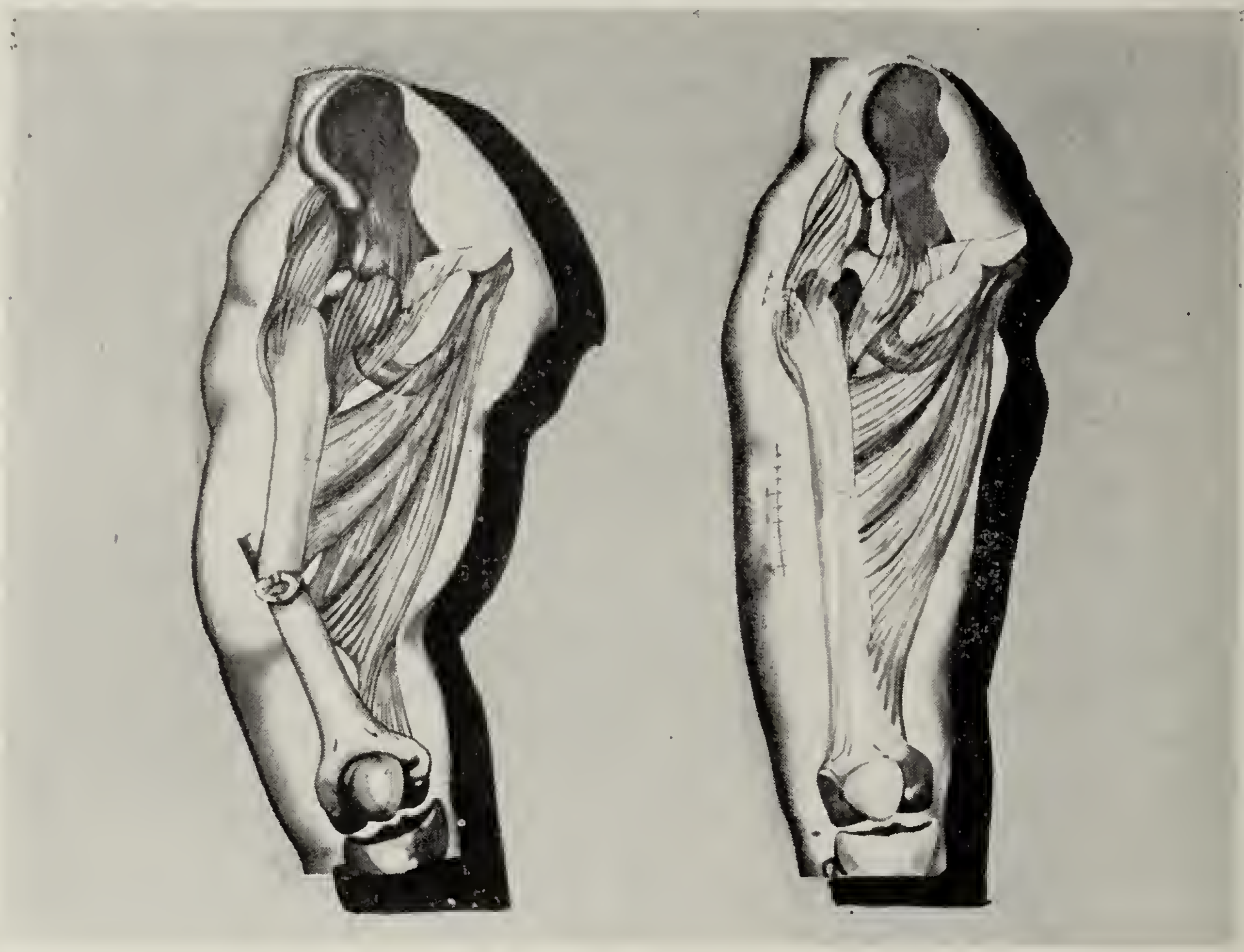
Section II

ATLAS OF RUSH PIN TECHNICS

The Lower Extremity

Section I dealt with general considerations in medullary pinning

Section III will deal with the upper extremity



Fractures of the shaft of the femur have a general tendency toward antero-lateral bowing because of the adductor muscle pull. A curved pin can resist this force to give stable fixation by three-point pressure.

It is rarely necessary to see the bone to fix it properly. Semi-open reduction is the rule.

17

THE FEMUR

This bone is amenable to pinning from the subtrochanteric area (except in old people) to and including the condyles. There must be some variance of operative technic at different levels because of the bone structure and the differing muscle pulls at these levels.

Fracture of the mid-shaft is easiest to deal with and will be discussed first. The operation will then be modified for adaptation to other regions of the femur in a natural progression of technic.

To follow the orthodox textbook approach would but cause confusion. Fracture levels will be discussed in this order:

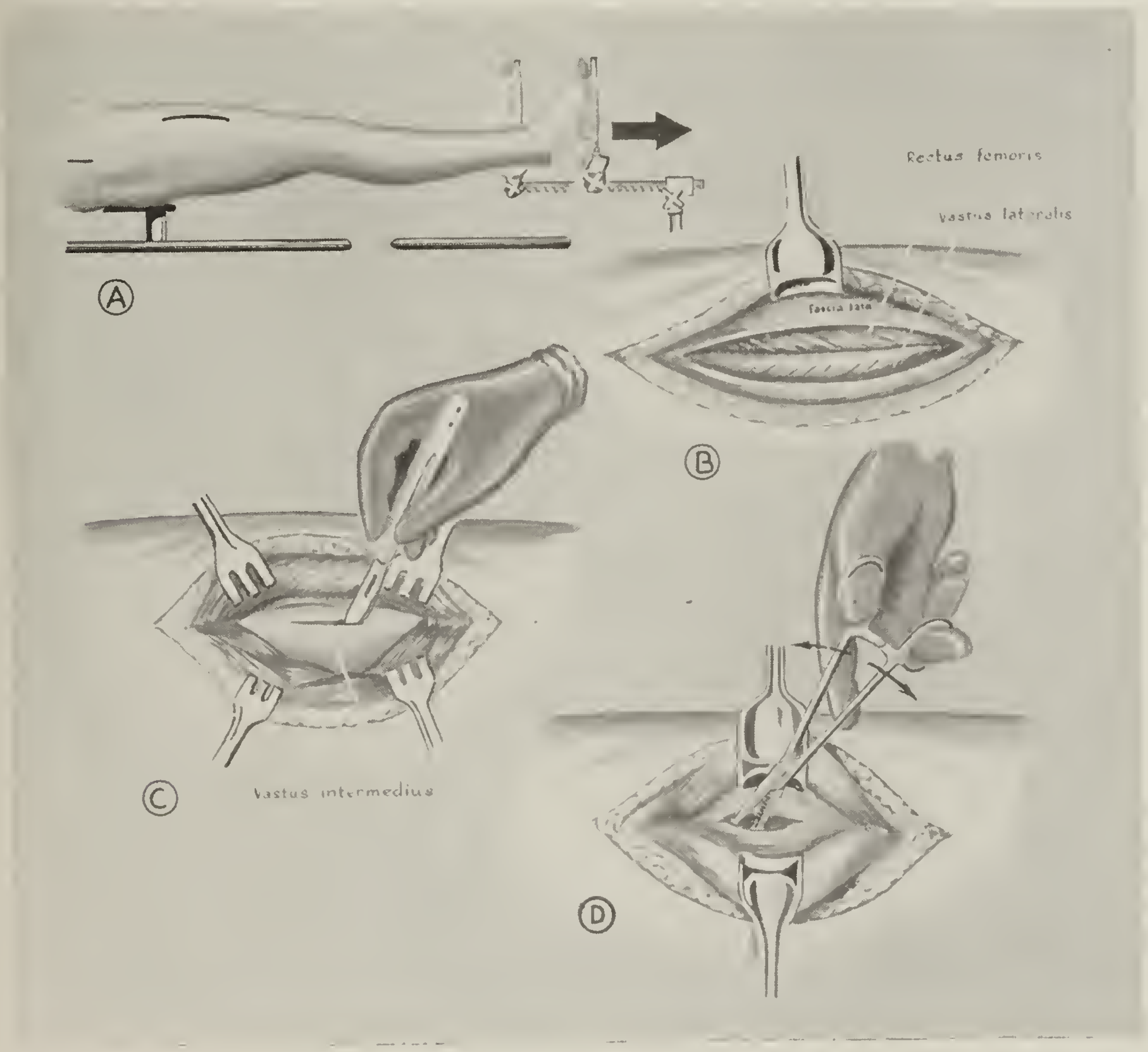
1. Mid-shaft.
2. Junction upper and middle thirds.
3. Subtrochanteric region.
4. Supra-condylar region.
5. Junction middle and lower thirds.
6. The condyles.

Mid Shaft

The deformity here results from the force of violence rather than muscle pull. Bones overlap markedly and may be displaced in any direction, but distal fragment is usually posterior.

Any fracture table is satisfactory. There is no need for the lateral position or for special attachments for the table.

The lateral incision can be used. The antero-lateral approach is almost bloodless and gives mechanical advantages for semi-open operation.



(A) Position of patient on fracture table. Simple recumbency, hip adducted and neutral as to rotation. Moderate, not strong, traction to overcome shortening. Incisions indicated.

(B-D) The antero-lateral incision for semi-open reduction.

(B) Six-inch incision through skin, fat and fascia lata exposes cleavage line between rectus femoris and vastus lateralis muscles.

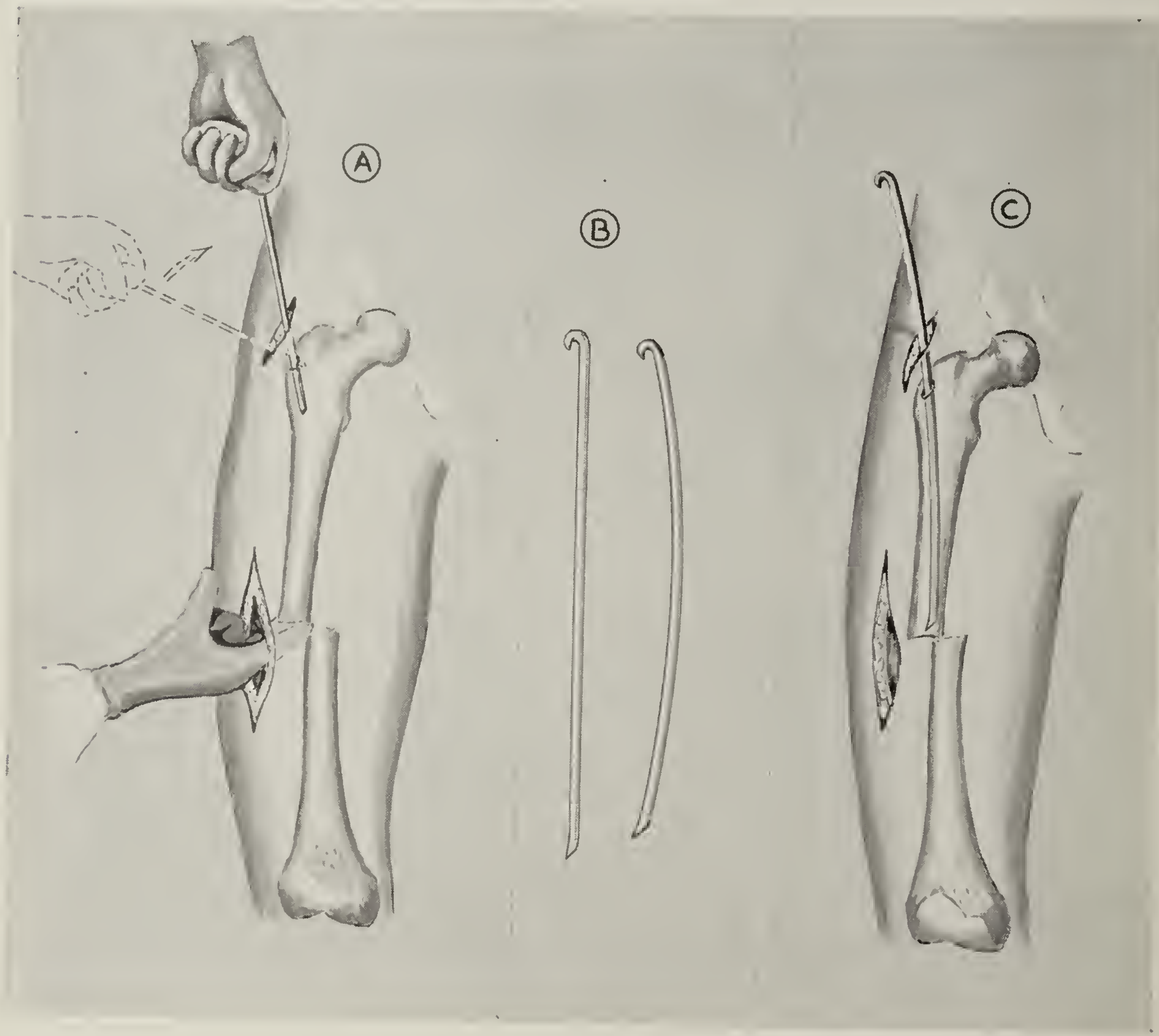
(C) Rectus femoris reflected medially exposing aponeurosis covering vastus intermedius. Small incision is made through aponeurosis only, not cutting muscle.

(D) Artery forceps pushed through vastus intermedius into hematoma. Blades spread until opening admits two examining fingers.

Technic

The pin should be inserted and the point be palpable at the fracture line before bone manipulation begins. There is no point in manipulating the bone until the pin is ready to enter the distal fragment. By following this procedure it becomes necessary to hold the bone in the reconstructed position but a few seconds as the pin crosses the fracture line.

The muscles of the thigh are strong and manipulation time should be minimal because it is exhausting to the surgeon. For this reason the primary incision should be made first to identify the position of the proximal fragment by palpation. This orientation makes a simple procedure of inserting the pin in the proximal fragment.



The Proximal Fragment

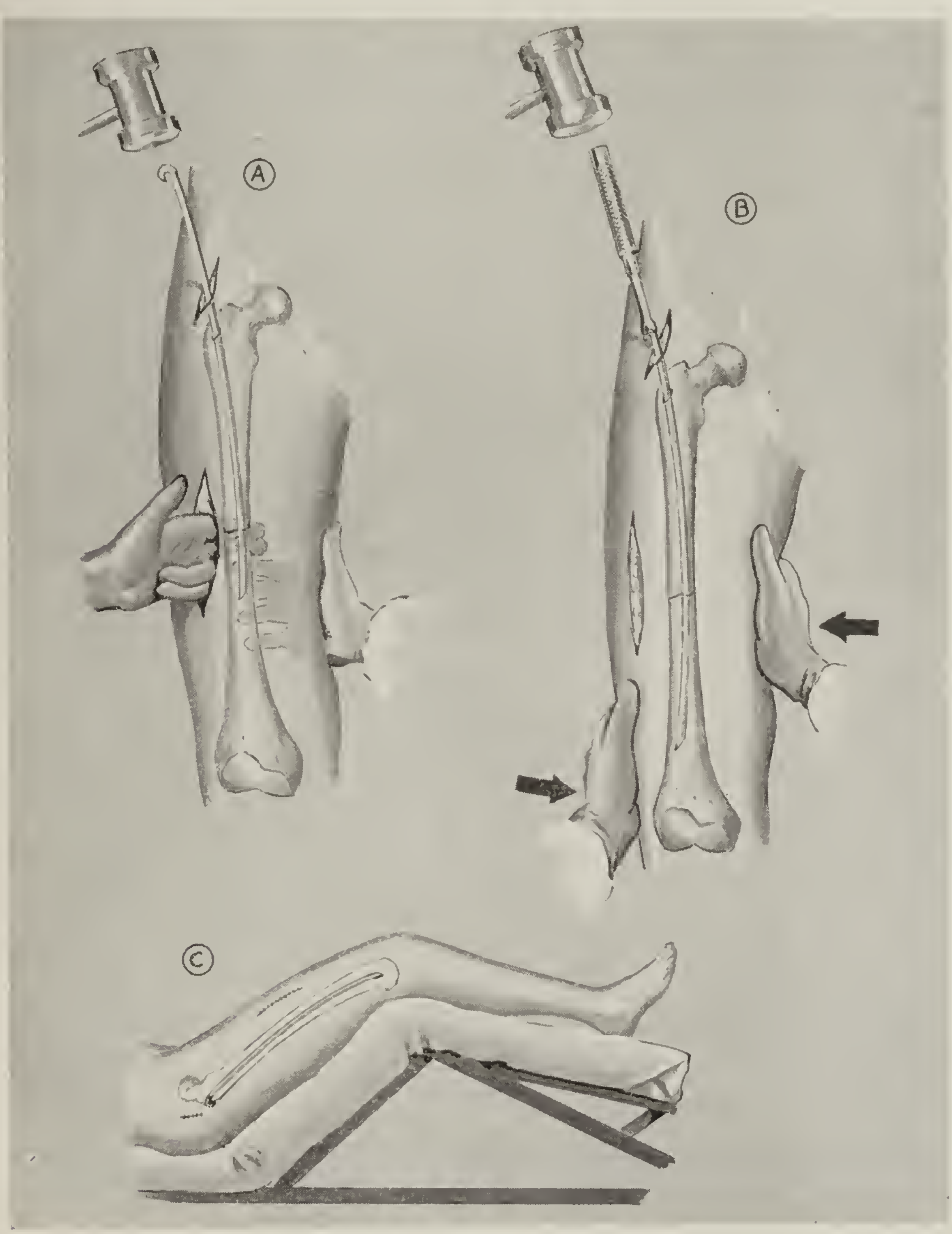
(A) The proximal fragment does not rotate and great trochanter is directly lateral. It is identified by palpation and exposed by a two-inch incision which extends through fascia lata.

With fingers in each wound, line of proximal fragment is easily visualized mentally without actual exposure of the bone.

Identify point of insertion which is the supero-lateral surface of the great trochanter. Start opening in bone at this point with awl reamer. Drill not deeper than one-half inch. During this procedure keep palpating fingers on end of proximal fragment for orientation. Direct the awl reamer at a point just medial to finger tips and ream hole to depth of one and one-half inches. Leave reamer in place.

(B) Select pin (from Rack No. 1) of proper length to reach into condyle. Allow one extra length for curve. Shape pin into slight curve, (B) using bending iron.

(C) Remove reamer and insert pin into trochanter. As it is tapped with mallet, the sled runner will engage far cortex and ride it down to the fracture line. Continue driving until point can be palpated at fracture line. Allow pin to rotate. It guides itself in this manner.

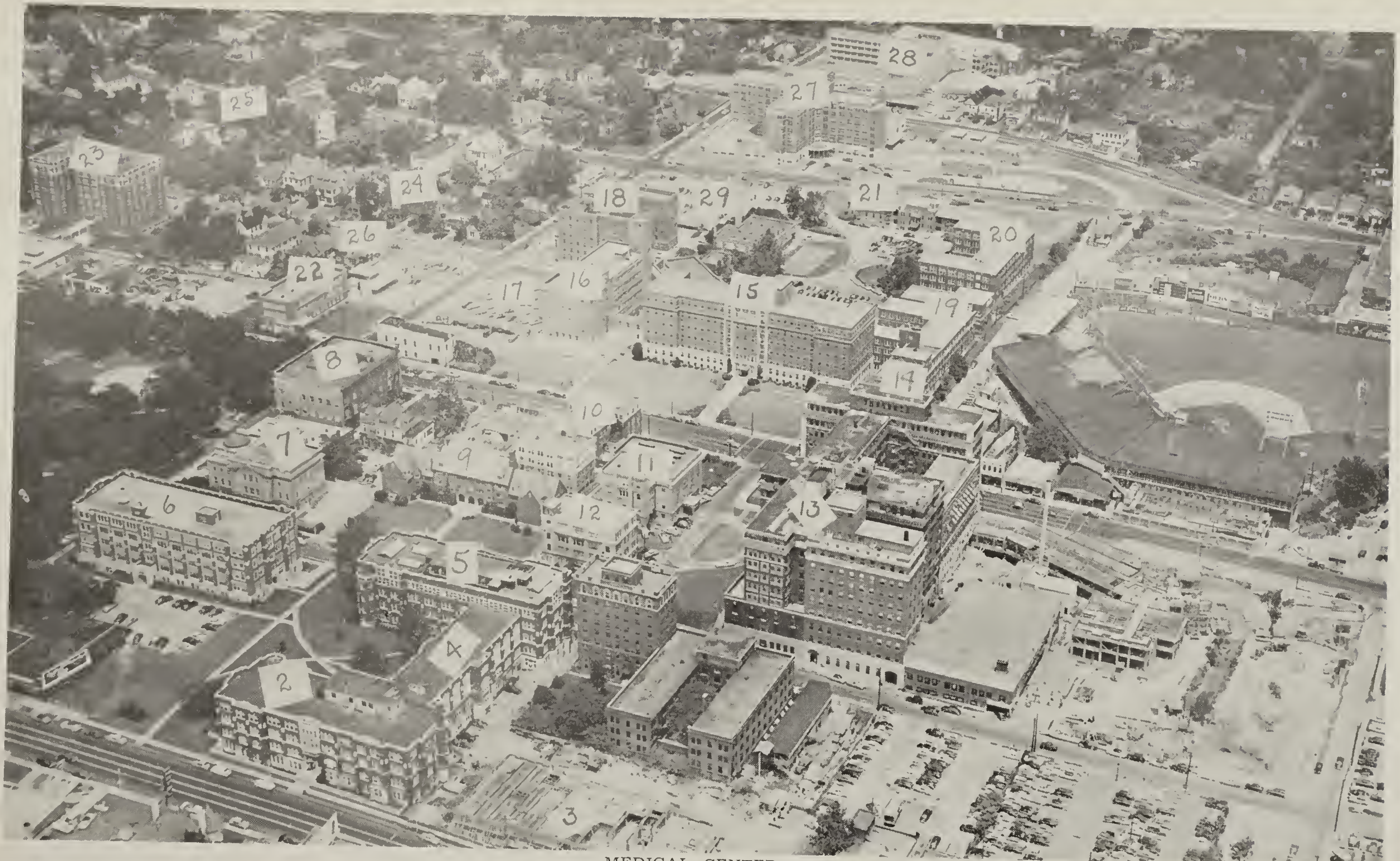


Transfixion

(A) Bone is realigned by manual and finger manipulation. The right hand is lifting the lower fragment forward. When fragments are in proper relationship, pin is driven short distance into distal fragment. Reduction must be good at this stage. It is difficult to make adjustments after pin has passed deeply into distal fragment.

(B) Note direction of pressure of hands as pin is driven home. This directs point toward lateral cortex and insures against medial angulation. Guide hooked head with pliers as it is set to be sure the hook is directed laterally.

(C) Proper bed position to minimize swelling and to avoid rotary strain. This position applicable to all femoral fractures.



MEDICAL CENTER

1. Administration-Postgraduate Building Site. 2. Pharmacy Building. 3. Chemistry-Physiology Building Site. 4. Mooney Memorial Library. 5. Wittenborg Building. 6. Dental Building. 7. Polyclinic Dormitory. 8. University Center. 9. University Dormitory. 10. Willis C. Campbell Clinic. 11. Lindsley Hall (Memphis and Shelby County Health Department). 12. Eve Hall. 13. Baptist Memorial Hospital. 14. John Gaston Maternity Hospital. 15. John Gaston Hospital. 16. Institute of Pathology. 17. Medical-Surgical Building Site. 18. Gailor Psychiatric Hospital and Diagnostic Clinic. 19. Institute of Clinical Investigation. 20. Marcus Haase Home for Nurses. 21. Isolation Hospital. 22. Cancer Research Laboratory. 23. Goodman House. 24. Les Passes Treatment Center for Cerebral Palsied Children. 25. West Tennessee Cancer Clinic. 26. School of Nursing. 27. West Tennessee State Tuberculosis Hospital. 28. Le Bonheur Children's Hospital. 29. Negro Hospital Building Site.

Building Program of Medical College of U. of T.

LARGEST MEDICAL SCHOOL IN THE U. S. AT THE PRESENT TIME AS REGARDS STUDENT BODY

Memphis' Medical Center, of importance for many years to both the region and the nation as a teaching, research, and hospital area, is undergoing a tremendous expansion program.

Its teaching research facilities, under the University of Tennessee Medical Units, are being enlarged by a $5,000,000 building program. The city of Memphis is spending an additional $3,000,000 to enlarge the facilities of the city of Memphis hospitals, including the construction of a new Negro teaching hospital and the addition of two floors to the pediatric wing of the John Gaston Hospital, teaching facility of the Medical Units' College of Medicine.

In addition, Baptist Memorial Hospital is adding a 450-bed addition at a cost of $5,800,000; Campbell Clinic, one of the South's largest facilities for orthopedic surgery, is building a $500,000 addition for diagnostic purposes.

The total figure of $14,300,000 is impressive. Yet it does not tell the whole story.

In 1950 the University established a Postgraduate Department to offer programs in medicine, dentistry, pharmacy, nursing and other allied fields. The programs are presented to inform members of the various professions of the latest developments in their particular field.

When the new Institute of Pathology Building was completed in the fall of 1951, the old building was converted into the Institute of Clinical Investigation. The building houses the section of clinical chemistry and the section of clinical physiology. All of the clinical chemistry determinations for the John Gaston Hospital are made by the section of clinical chemistry. The section of clinical physiology is devoted to co-operative clinical and physiological research.

Active research programs are being followed in a number of fields at both the clinical and preclinical levels. One of the largest investigations is in the field of cancer. Most of this research is conducted in the Cancer Research Laboratory, which was completed in the summer of 1951. The program is supported generously by the United States Public Health Service, the American Cancer Society, and other fund-granting agencies.

The new building program is expected to be completed by 1956.

When it is completed, both the Wittenborg (Anatomy) Building and the C. P. J. Mooney Memorial Library Building will be remodeled. An additional floor will be added to the Pharmacy Building. Expanded facilities will thereby be provided for the Division of Anatomy, the Library and the Division of Pharmacology.

A more detailed description of the building program of the University and the city of Memphis hospitals follows:

An Administration-Postgraduate Building is being erected on the northeast corner of Dunlap and Union. The five-story building will house the administrative staff of the University and will provide rooms for the Postgraduate Department. The building, 42 feet wide and 160 feet long, will be connected by an arcade with the Pharmacy Building on 874 Union Avenue. The offices of administration are currently housed in the C. P. J. Mooney Memorial Library Building.

A five-story Chemistry-Physiology Building for the University is under construction on Union Avenue east of the Pharmacy Building. The building will be 70 feet wide and 192 feet long. The first three floors will provide facilities for teaching and research by members of the Division of Chemistry. The fourth and fifth floors will be occupied by the Division of Physiology. These divisions are presently housed in Wittenborg (Anatomy) Building. A full basement will provide extensive storage facilities, a high-level activity radioisotope laboratory and space required for electrical distribution panels and air-conditioning units. The building will be connected by an arcade with the Pharmacy Building at 874 Union Avenue.

A Medical-Surgical Building for the University is being built on Dunlap south of Gailor Psychiatric Hospital and Diagnostic Clinic. The building will be connected with the hospital by corridors on the first four floors. The building will be 110 feet long and 40 feet wide. It will be occupied by the Family General Practice Clinic of the College of Medicine, medicine and pediatrics Out-Patient Departments, cardiology research laboratory, obstetrics and gynecology, psychiatry, neurology, orthopedics, radioactive isotope, and other special clinics. The sixth and seventh floors will be occupied by the bacteriological laboratories of the Memphis and Shelby County Health Department and the Memphis branch of the Tennessee

State Health Department. These laboratories are currently quartered in the Pharmacy Building at 874 Union.

The city of Memphis has begun construction of a 125-bed teaching hospital for Negroes on the corner of Dunlap and Jefferson adjacent to Isolation Hospital. This new hospital will accommodate private Negro patients and function as a teaching facility for Negro physicians, technicians and nurses.

The pediatric wing of John Gaston Hospital will be enlarged by the addition of two floors; this will add 50 beds and modernize this facility for children.

ALL MEDICAL FACILITIES IN MEMPHIS ARE BEING EXPANDED. SUMMARY OF INTERESTING CHANGES AND ADVANCES IN MEDICAL CENTER

The skyline of the Medical Center of Memphis is in transition now as skeletons of new buildings promise expanded facilities in medical education and hospital care for citizens of the mid-South area.

The 13-story addition to Baptist Memorial Hospital, in the heart of the Medical Center, is taking shape rapidly. Workmen are completing the framework of the ninth floor now. This streamlined, air-conditioned building will add 250 beds to Baptist, bringing the total capacity to 800 and making it the largest private hospital in the South.

Across the way at the University of Tennessee, the U. S.'s largest medical school, a vast building program is underway, also. The five-story Chemistry-Physiology Building is 90 per cent completed. Ground has been cleared to make way for the proposed new administration building at the corner of Union and Dudley and work is well underway on the new general hospital for Negroes. An expansion of out-patient facilities at Gailor Hospital is planned for the near future, too.

Specialty hospitals in the Medical Center area include LeBonheur Children's Hospital, Gailor Psychiatric Hospital, West Tennessee Tuberculosis Hospital, Isolation Hospital, Campbell's Clinic (orthopedics), Memphis Eye, Ear Nose and Throat Hospital, and the Gartly Ramsay Hospital.

The large general hospitals in the city, in addition to Baptist, include Methodist, St. Joseph's, and John Gaston, the city hospital and teaching center for UT. Bed capacity at these institutions totals 1640 beds with the following distribution:

John Gaston	540
Methodist	275
St. Joseph	280
Baptist	545

In addition, Memphis boasts several government hospitals: Kennedy Veterans (a general hospital of 1250 beds); V. A. No. 88 (tubercular) and the U. S. Public Health Hospital. There are also several clinics and specialty hospitals in the city, including Crippled Children's, Crippled Adults', Gartly-Ramsay, Highland Hospital, McLemore Clinic, Turner Sanatorium, Wallace Sanitarium, and Collins Chapel, Negro general hospital.

Memphis physicians who practice at these hospitals are recognized the nation over. Many head national organizations, including Dr. Harold Boyd, president, American Academy of Orthopedic Surgeons; Dr. Milton Adams, president, American Society of Plastic and Reconstructive Surgery; Dr. M. L. Trumbull, president-elect, American Association of Blood Banks; Dr. Joseph H. Francis, president, American Association of Railway Surgeons; Dr. Clarence D. Hawkes, president, Neurological Society of America; Dr. Sam Sanders, Chairman, American Medical Association's Section on Laryngology, Rhinology and Otology; and Dr. R. L. Sanders, president-elect, Southern Medical Association.

Dr. Francis has recently been named chief of staff at Methodist Hospital. President of the staff there is Dr. E. E. McKenzie. Dr. E. C. Segerson is president at St. Joseph's and Dr. E. G. Campbell chief. President of the staff at Baptist is Dr. Harwell Wilson. Dr. Charles J. Deere is chief.

Through the years Memphis has become recognized as the center for research and specialized medical care in the tri-state area, with patients being referred there by doctors in the surrounding states which it serves. Baptist received a grant this past summer by the National Foundation for Infantile Paralysis to establish the rehabilitation center which is now serving patients from six states. Radioisotopes and other new methods and materials of this atomic age are being used now in Memphis hospitals which are among the best equipped in the country.

Out-of-town doctors attending the Postgraduate Assembly are invited to tour these hospitals, as well as the University, to see first-hand the facilities and services which are available in the expanding Medical Center of Memphis.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

W. H. ANDERSON, M.D. ... Editor-in-Chief
MILDRED P. ANDERSON ... Assistant Editor
David E. Guyton, Blue Mountain College ... Poet

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

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EDITORIALS

Despite the myths about the blessings of retirement, no satisfactory substitute for self-support through work has been found for the person who wants to maintain his customary standard of living, to be useful, to have a feeling of achievement, and to contribute something to society as long as he is able.

MEMPHIS ISSUE

You will note that this is the Memphis issue of the *Mississippi Doctor*. We are grateful to Dr. Harwell Wilson for securing the papers for this issue of the journal. The Mid-South is really the patriarch of postgraduate assemblies, and Memphis doctors are due our salute!

THE MID-SOUTH

The Mid-South Medical Assembly opens its four-day session at the Peabody Hotel on February 9. Dr. L. S. Nease of Newport, Tenn., will preside as president. Always full of optimism, he has been one of the most faithful attendants of this organization for many years. Dr. R. B. Caldwell of Baldwyn, Miss., is the incoming president. He is also president of the Mississippi State Board of Health and one of the most active doctors in organized medicine in the state. Dr. Thurman Crawford of Memphis will be the moving power as executive secretary.

The scientific program promises to be unusually good. Members of the Academy of General Practice will be given full academic credit for attending this meeting.

The fellowship at the Mid-South is without compare. Memphis doctors are cordial, and the medical atmosphere of the city so stimulated by growth and expansion, one feels Memphis is the Vienna of American medicine.

EXHIBITORS

Exhibitors have been a big factor in making the Mid-South Assembly what it is. The expense money for the association comes largely from the exhibitors, for the past 28 years now expertly handled by Dr. Gilbert Levy. He has done a wonderful job for the association.

There should be a sympathetic cooperation between the medical profession and the exhibitors and their biological houses. It takes plenty of research work to keep medicine on the march. The companies that produce new drugs, new biologicals, and new instruments have the same noble purposes as the medical profession. The service unit to build health assets is made up of the physician, the dentist, the pharmacist, the nurse, the hospital executive, and the biological house and research laboratory.

PUBLIC HEALTH CURTAILED

It is a certain fact that Mississippi's public health service ranks at the very top in the nation. Every doctor and every citizen is justly proud of this record. National funds have been cut for the health program in our state. Our state legislature may not feel that it is able to make up all the deficit. But it will not be good economy to go backward in health service. A careful study should be made by the legislature to take care of the most important services. Many diseases have been whipped within the last few years — typhoid, diphtheria, smallpox, hookworm, undulant fever, and venereal diseases. We have to be wary lest any or all of them return. Victory over polio seems to be in the offing. Cancer must be conquered. This is not impossible.

Great progress has been made against tuberculosis. Less than forty years ago, the death rate for tuberculosis was about 4,000 per year, this last year, the indications are that it will be less than 300. We have one of the most modern T.B. hospitals in the world. For treatment and as an educational center for interns its value can hardly be over-estimated. The extensive work by the mobile units and the interpretation of x-ray films have been most valuable in the fight against T.B. in this state. In our human economy as it now exists private practice and public health must hold cooperative hands. The strength of a state is in the health of its people.

DR. D. P. STREET

The passing of Dr. D. P. Street of Vicksburg took from the profession a most able man in the field of medicine. He was a native of northeast Mississippi and a member of one of its most prominently connected families. He was a man of unusual ability both in medicine and as an executive. Vicksburg has steadily grown as a medical center for more than a half century, Dr. D. P. proving what personal vision and industry can do in the field of medicine. He did not worry about the financial outcome of his hospital as long as he could give the people the best possible medical service. He possessed medical integrity in abundance and he was a citizen of deep conviction and unusual stamina. He was a member of the Fifty-Year Club. Our state is proud of the standard of service set by the Streets of Vicksburg.

HALF-MAST

The Past-Presidents Club of the Mid-South has had a heavy blow in the loss of some of its finest members. The club will not be like itself without the beloved, active and brilliant Jere Crook. He always brought good cheer and constructive thoughts. Dr. Charles Lutterloh was one of the younger past-presidents, a most scholarly and personable man. All were proud to be a fellow member with him. Dr. A. W. Harwell, also of Arkansas, one of the sweetest spirits in medicine known in the mid-South, courtly and generous. Dr. J. W. Barksdale of Jackson, Miss., was a most able surgeon and a brilliant man. We think of him along with late Drs. John Darrington of Yazoo City, Miss., and Gus Crisler, Sr., of Memphis, for professional rapport, culture and wit.

HOW DOCTORS MAY HELP IN STUDENT NURSE RECRUITMENT

Counselor Frances L. Moak, 2200-38th Street, Meridian, offers the following suggestions to the medical profession. Miss Moak is a member of the Committee on Careers in Nursing in Mississippi and her committee invites more doctor participation in nurse recruitment.

There is human life in the right kind of bedside nursing. The nurse has such a wonderful opportunity to teach the patient the ways of health. She can inspire the patient to live a bigger and a more successful life after he leaves the hospital. The nursing profession needs fine women who possess culture and refinement and have had as much education as possible. When the doctor and the nurse work in harmony the patient receives the utmost benefits.

FROM THE COMMITTEE:

Doctors are a potent force in recruitment. A word from one of them can do much to sway a young person toward or away from a career in nursing. The Committee on Careers in Nursing invites doctors in Mississippi

1. To help other members of the medical profession to recognize the nursing profession for what it is today — a dynamic field full of opportunities for the ambitious, offering both security and great job satisfaction.

2. To counsel young patients and the sons and daughters of patients wisely and knowledgeably about nursing as a career and recommend it enthusiastically; and offer to telephone the local recruitment headquarters or a local school of nursing to make an appointment for an interested person.

3. To keep folders and/or posters giving information about professional and practical nurse education on display in the waiting room. A number of doctors and dentists with patients of junior high school age have cooperated by stocking the cartoon leaflet, "Janie's Decision."

4. To read, and keep on hand, additional information about nursing, bulletins of local schools, general literature such as *Preparing Tomorrow's*

Nurses, and publications of local, state or national careers committees.

5. To help finance scholarships and recruitment programs by encouraging contributions through medical societies and by giving as individuals.

6. To publicize nurse recruitment facts and programs in medical journals.

7. To participate in recruitment committee planning activities, including speakers' bureaus.

MRS. GILFOY RETIRES

Mrs. Karenza Gilfoy has retired as administrator of the Baptist Hospital at Jackson. Under her able, long-time management, the hospital grew from 50 beds to 263 beds, and made noteworthy progress in all respects. Mr. J. T. Grantham, assistant administrator, is a man of heart and vision, and high purpose for public service. A two-million-dollar professional building soon to be constructed across the street from the medical school to be owned by the hospital, is further evidence of the successful growth of the Baptist Hospital.

The keystone of every public health endeavor must always be the private practitioner of medicine, who must rely on the local health department for assistance. If the health department is properly organized and carries out the objective for which it was designed, it will support and improve the private practice of medicine. Vlado A. Getting, M.D., J.A.M.A., Sept. 26, 1953.

NEWS AND COMMENT

MISSISSIPPI HEART ASSOCIATION LAUNCHES CAMPAIGN PLANS

Headed by Dr. W. K. Purks of Vicksburg, president of the Mississippi Heart Association, plans are in effect for the 1954 Heart Campaign. This is the fourth campaign for the Mississippi chapter, and $100,000 is the goal. Several new ideas are enlivening the campaign heart contributions solicited by milkmen, hearts to hold coins solicited by waitresses, special gifts acknowledgements, radio and TV and newspaper presentation of facts about heart disease.

Dr. Arthur C. Guyton, Oxford, is president-elect of the Mississippi chapter; Dr. J. P. Tatum, Meridian, is vice-president; Dr. J. Manning Hudson, Jackson, is secretary, and Mr. S. C. Hart, Jackson, treasurer. Miss Lucile Little is the executive secretary, with central office at 133 South Lamar Street, Jackson, P. O. Box 584.

CANCER LECTURE COURSE

"Nursing the Cancer Patient" is to be the subject of a course of lectures to be given in Jackson, beginning February 9, 1954, and ending March 16. The lectures are held each Tuesday at 7 p.m. Dr. W. H. Parsons will deliver the first lecture on the subject, "The Nature of Cancer," followed by "The Gross Pathology of Cancer," and "Trends in Research" by Dr. W. V. Hare.

FEBRUARY 16 Dr. F. J. Hamernik, Vicksburg, will discuss "The Pre- and Post-Irradiation of Cancer Patients", with panel discussion.

FEBRUARY 23 Dr. Julian Tatum, University, will talk on "The Social Problems Involved in Cancer", with panel on nursing problems.

MARCH 2 Dr. Hugh A. Gamble, Greenville, will present "The Pre- and Post-Therapy of the Cancer Patient", coupled with "Basic Concepts of Mental Hygiene as Applied to the Cancer Patient", by Dr. Jessie V. Rhinehart, VA Hospital, Jackson.

MARCH 9 Mrs. Elizabeth N. Wates, Jackson, will discuss the "Role of the Nurse in Cancer Control in Relation to Her Job" and "The Part the Nurse Plays in Family Adjustments."

The last of the series, on MARCH 16, will be conducted by Miss Lucille Russ, Jackson, who will present "The Use of Community Resources, Educational Tools and Techniques in the Program of the American Cancer Society."

S. S. C.

The Southeastern Surgical Congress will hold its twenty-second annual session at the Tutwiler Hotel in Birmingham, Ala., March 8, 9, 10, 11, 1954. For excellent surgical papers this association is not to be surpassed in the nation. Make reservations. Procure a program if you do not have one.

CARDIOLOGY COURSE

A review course in cardiology will be held at the University of Mississippi, February 8-12. This course of lectures will be very valuable. Our medical school is on its tiptoes. We are proud of the constructive work that Dr. Albert Guyton is doing in heart disease.

A.M.A. LEGISLATIVE COMMITTEE

To maintain closer rapport with legislative personnel in the states, the A.M.A. Committee on Legislation is scheduling regional conferences 1) to advise of desirable contacts with members of Congress on national legislative affairs, and 2) to discuss medical issues coming up in the new Congress.

The regional meeting which was attended by Drs. Boswell, Street, and Nobles, MSMA Committee on Public Policy and Legislation, was held in Atlanta, Ga., on January 31.

UT POSTGRADUATE COURSES

The University of Tennessee College of Medicine, in cooperation with the John Gaston Hospital and Le Bonheur Children's Hospital, will offer six postgraduate courses for mid-South physicians during 1954.

Courses and the dates they will be offered are:

Pediatrics, March 10, 11 and 12; Abdominal Surgery, March 31, April 2; Obstetrics and Gynecology, May 19, 20 and 21; Trauma, July 28, 29 and 30; Management of Simple Fractures, September 15, 16 and 17; and Clinical Electrocardiography, October 6, 7 and 8.

Further information may be obtained from the Postgraduate Department, 4 South Dunlap, Memphis, Tennessee.

ANNOUNCEMENTS

Beverley E. Smith, M.D., diplomate American Board of Psychiatry and Neurology, announces the opening of offices for the practice of neuropsychiatry, 719 Carlisle Street, Jackson, Mississippi. Phone 5-5812.

James Grant Thompson, M.D., announces the change of address from 501-508 Plaza Building to 710 East Fortification Street, Jackson, Mississippi, for the practice of diseases of the skin.

DEATHS

DR. DONALD POLLOCK STREET

(From an editorial, January 11, in the *Vicksburg Post*)

A little over ten years ago, the Sisters of Mercy took over the operation of the Vicksburg Sanitarium and changed the name of the institution to Mercy Hospital-Street Memorial. Yesterday, it became, in fact, Street Memorial—a memorial to a medical pioneer, as the soul of Dr. Donald Pollock Street went to its Maker.

At about the turn of the century, Dr. Street founded Street's Sanitarium, and it was the first privately owned hospital in Mississippi. Two years later, he opened Mississippi's first school of nursing in connection with his hospital and in 1908 he instituted a department of pathology in the hospital—another first in Mississippi. Upon that foundation, Dr. D. P., as he was familiarly known, saw his hospital go forward as the leading hospital in our state. Joined later by his brothers, Drs. George and Augustus Street, he built the institution to a position of eminence in his profession, and it has long been recognized as one of the finest smaller hospitals throughout the South. The foundation of the Sanitarium was firmly set in the ideals of service and of medical and surgical skill. When Dr. Street opened his hospital, such institutions were looked upon as a place of last resort—a place to go and die. That picture was changed so many, many years ago, and the modern hospital, of which his was a shining example, became the place to get well—to be cured. Dr. Street kept apace with the rapid strides in medicine and in surgery and in pathology and in every phase of medical science, and he brought to his patients the latest improvements in treatment, in surgery technique and in hospital care.

Although he had retired from active practice, Dr. D. P. never lost his intense interest in the hospital and in his profession, and he could be seen every day about the hospital—the place he loved and into which he had put so much of his energy and vision.

A pioneer has gone to his reward, true to the finest traditions of a most honorable profession. No epitaph could more eloquently memorialize him than the great institution he founded and headed for so many years, for it is his monument of courage and sacrifice and service to his fellow man—it is a living tribute to a great pioneer.

DR. HOWARD SCUDDER

Dr. Howard Scudder, oldest practicing physician in Mississippi, died at Mercy Hospital in Vicksburg early January 15 after being stricken with a heart attack at his home. He was 93.

A family doctor in sparsely-settled Issaquena County for 63 years, Dr. Scudder had received patients until a few hours before the fatal attack.

Services were held at Mayersville Methodist Church. The Rev. Earl Presley of Magnolia and the Rev. J. S. Holiday of Mayersville officiated. Burial was in Greenfield Cemetery at Glen Allen.

Dr. Scudder was born in Wilkinson County a year before the Civil War began. Before becoming a physician, he had been a veterinarian, a civil engineer and a school teacher. He had served on the board of supervisors eight years and was a member of the Sharkey-Warren-Issaquena County Medical Society and the Mississippi Medical Association. He was one of the first members in the Fifty-Year Club, having completed his half century of practice when the club was organized.

DR. CHARLES H. LUTTERLOH

Charles Hartzell Lutterloh of Hot Springs, Arkansas, was born in Jonesboro, Arkansas, October 13, 1953, and died October October 30. 1953, at the age of 56 from arteriosclerotic heart disease.

Dr. Lutterloh was a graduate of St. Charles Military Academy, St. Charles, Missouri, received his B.S. degree from the University of Arkansas, and graduated from Tulane University School of Medicine, in 1921. He interned at Touro Infirmary, New Orleans, Louisiana, and Memphis General Hospital, Memphis, Tennessee. He practiced at Jonesboro, Arkansas, from 1923 to 1931, and at Hot Springs, Arkansas, from 1931 until shortly before his death.

He became a fellow of the American College of Physicians on April 6, 1932, and a diplomate of the American Board of Internal Medicine on July 1, 1937. Dr. Lutterloh was Clinical Professor of Medicine, University of Arkansas School of Medicine, consultant in medicine, Army and Navy General Hospital, Hot Springs, Arkansas, and the Veterans Administration Hospital, Little Rock, and a member of the staff of the St. Joseph's Hospital and the Leo N. Levi Hospital, Hot Springs.

He was past-president of the Hot Springs Garland County Medical Society, Arkansas State Board of Medical Examiners, and Mid-South Postgraduate Assembly.

He was a member of the American Medical Association, Southern Medical Association, American Society for Clinical Investigation, New York Academy of Sciences, American Society for the Study of Arteriosclerosis, American Diabetic Association, American Heart Association, American Geriatrics Association, American Rheumatic Association, and American Association for the Advancement of Science. He was a member of Lodge No. 129 F.&A.M., Royal Arch Mason, Knight Templer, Shriner, York and Scottish Rites, and had served on the board of stewards of the First Methodist Church of Hot Springs for six years.

Dr. Lutterloh served in World War I as a private in the Student Training Corps, University of Arkansas, Fayetteville, being discharged on November 26, 1918. He became assistant surgeon in the Naval Reserve on July 14, 1932, with the rank of Lieutenant, (j.g.). After being honorably discharged he served as examining physician for the Garland County Selective Service System from August 2, 1941. He entered the United States Air Force on September 15, 1942, with a commission of major. After transferring to the Army of the United States, he was promoted to lieutenant colonel on March 18, 1944, and was discharged on January 3, 1946.

He served as state chairman of the Easter Seal Campaign for the Arkansas Association for the Crippled in 1948.

It is with deep regret that friends and colleagues accept the loss of Dr. Lutterloh at this time.

DR. R. H. FOSTER

Services for Dr. Robert Heath Foster, retired Army, Navy, Marine and Veterans doctor of Meridian, who died at Anderson's Hospital after a lengthy illness, were held December 27 at Stephens Funeral Home chapel, Dr. J. Kelly Unger, First Presbyterian Church pastor, officiating.

A final humanitarian gesture ended a life-time spent in healing with the donation by Dr. Foster of his eyes to the Southern Eye Bank in New Orleans.

Dr. Foster, at the time of his retirement in January, 1950, was surgical and orthopedic examiner and consulting surgeon for the Veterans Administration Rehabilitation center in Birmingham, Ala.

Born on a cotton plantation in Issaquena County, Miss., he received his B. S. Degree from Mississippi College, Clinton, and his M. D. Degree from Tulane University, graduating there in 1908.

Dr. Foster entered private practice in Meridian in 1910, and was married to Miss Rebecca Brooke of Meridian who died in 1932. In 1917, he went into the Navy as a senior lieutenant and medical officer, serving 12 months with the Marines at Paris Island.

He began work with the Veterans Administration in 1933. During World War II, in which he served as an Army colonel, he was on duty at the veterans hospital in Atlanta and later at Memphis as chief surgeon. He went to his last assignment in Birmingham from Memphis in 1947.

Dr. Foster leaves two sisters, Mrs. Annie Foster Ellis, Los Angeles, Calif., and Mrs. Mary Foster Donald, Memphis.

DR. J. P. BURNHAM

Services for Dr. James P. Burnham, who died Christmas Eve following a long illness, were conducted from the chapel of the Canton Undertaking Company, with the Rev. David Cranford, pastor of the First Baptist Church, officiating and burial following in the Canton cemetery.

Dr. Burnham, who was 81, was born in Scott County, but had practiced medicine in Canton for many years until ill health forced his retirement. He was a Baptist. He received his medical education at Memphis Medical College, Memphis, Tenn.

He leaves two daughters, Mrs. Frank Dunn of New Orleans and Miss Mildred Burnham of Washington, D. C.; two sisters, Mrs. J. A. Stuart of Jackson and Mrs. Louise Nichols of Clarksdale; and one brother, Dr. Van Burnham of Ruleville.

DR. R. S. PLUNKETT

Dr. Randolph S. Plunkett, 78, died at Turo Infirmary in New Orleans. He had been in the infirmary for two weeks because of a heart ailment.

Dr. Plunkett was a practicing physician in the Picayune vicinity for about 50 years. He was a native of Carthage. He was a graduate of Memphis Medical College, Memphis, Tenn.

He is survived by his wife, Mrs. Lillian Rouff Plunkett of Picayune; two daughters, Mrs. Leon Morals of Harrahan, La., and Mrs. Alan Vairin of Algiers, La.; one son, Joseph H. Plunkett of New Orleans; and two stepdaughters, Miss Margaret Gutierrez of Chicago and Mrs. R. E. Segfried of Chicago. Six grandchildren also survive.

DR. G. S. BRYANT

Dr. Guy Sanford Bryant, retired Silver City, Miss., physician, died January 1 at the home of his daughter, Mrs. C. R. Forsythe, following an illness of two years.

Services were conducted from the chapel of the Stricklin-King Funeral Home with the Rev. J. S. Deal of Silver City and Dr. R. S. Woodson and the Rev. Jack Cranford of Yazoo officiating. Interment was in Glenwood cemetery.

Dr. Bryant, who was 71, was the son of the late Ludwig and Mattie Holladay Bryant of Tennessee and had been retired for several years. He had made his home with his daughter for several months.

He leaves his wife, of Silver City; his daughter, Mrs. C. R. Forsythe, Yazoo City; two grandchildren and one niece.

DR. S. L. COX

Services for Dr. Shelby Lawrence Cox were conducted by Rev. W. V. Stokes, assisted by Rev. Elmer Hook of Fayetteville, Ark., December 27.

Dr. Cox died early Saturday morning at his home in Water Valley. He was 75. He was born at Floral, Ark., the son of the late Rufus Bell Cox and Harriet Bailey Cox.

A graduate of the Memphis College of Medicine about 1901, he first began his practice in Panola County, moving to Water Valley in 1904. After a general practice of about 40 years he suffered a paralytic stroke in 1943, and had been confined to his home since that time.

He was a Methodist, a member of the Tri-State Medical Association, and a charter member and former president of the Water Valley Rotary Club.

He leaves his wife, Mrs. Jimmie Davis Cox, and two children, Lawrence E. Cox, city clerk of Water Valley, and Mrs. Charles M. Langford, also of Water Valley, and four grandsons.

DR. J. W. COPELAND

Dr. J. W. Copeland of Leland was killed instantly January 7 when his automobile was struck by an Illinois Central freight train at Burdette, about three miles south of Leland.

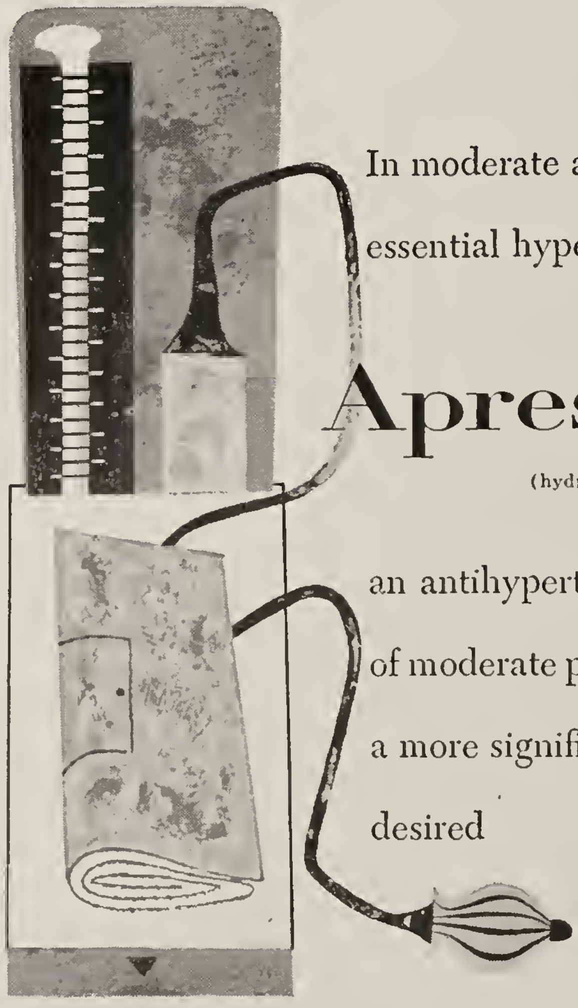
Apparently the doctor, who was past 75, either did not hear or see the train coming as he headed toward his plantation. The automobile was dragged 300 yards before the train was able to stop. Dr. Copeland was dead when the Boone Funeral Home ambulance got his body to the Leland City Hospital a short while later.

The collision happened on a county road at a crossing between the A. O. Huddleston and the Hugh Payne plantations.

Services were held at the home in Leland.

Dr. Copeland was born in Belzoni, Miss., attended school in Lexington, Tenn., was a graduate of the Tulane Medical School and had practiced in Leland since 1918.

He leaves his wife, Mrs. Sally Pool Copeland, two sons, Graydon Copeland of East Point, Ga., and Glen Copeland, Leland; four daughters, Mrs. R. T. Harris, Greenville, Mrs. A. J. Johnson, Columbus, Ga., Mrs. Nick Cefalu, Biloxi, and Mrs. Bobby C. Gilmer, Leland; two brothers, Otis and Ed Copeland, both of Hattiesburg; a sister, Mrs. Joe Welch, Bristol, Tenn.



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Hemorrhage in Pregnancy*

CHARLES EDWIN GALLOWAY
Evanston, Illinois

HEMORRHAGE continues to be a very prominent factor in maternal mortality and at the present time in many parts of this country it is the principal factor. As antibiotics and better asepsis due to increasing hospitalization lower the deaths from infection, and as education both of doctors and laymen causes a lowering of toxemic deaths, hemorrhage seems to change relatively little and thereby assumes greater prominence year after year. Mothers die from hemorrhage because they are permitted to lose too much blood and the blood is not replaced soon enough. A great deal of this responsibility can be placed on the physician.

Table 1, published by Dr. Robert A. Ross, shows the causes of 1000 maternal deaths in North Carolina between 1946 and 1950 and Table 2 shows the physician's place in the responsibility for these deaths.

TABLE 1
NORTH CAROLINA 1946-1950
1000 Maternal Deaths
Robert A. Ross

Toxemia	264
Hemorrhage	259
Embolism	74
Infection	73
Heart	64
Anesthesia	25
Other Obstetric	103
Non Obstetric	112
Information Lacking	26

TABLE 2
RESPONSIBLE FACTOR — ROSS
Physician

Hemorrhage	184 of 259
Toxemia	127 of 264
Infection	34 of 73
Anesthesia	25 of 25
Embolism	25 of 74
Cardiac	19 of 64
Other Obst. Causes	51 of 103
Total	465 of 862

Table 3 is from a report made by Dr. Charles Newberger on the causes of maternal deaths in downstate Illinois from 1948 to 1951 and again we see the prominent place which hemorrhage assumes, especially when ectopic pregnancy and abortion deaths are included.

TABLE 3
CAUSES OF MATERNAL DEATHS
Downstate Illinois 1948-1951
Charles Newberger

Hemorrhage (Ab., 3, Ec. 16)	104
Toxemia	80
Embolism	48
Infection	40
Anesthesia	15
Others (Shock 5, Heart 5)	22
Inaccurate Certificates	14%
Autopsies	42%

The three principal causes of maternal mortality in the East South Central area of the United States composed of Kentucky, Tennessee, Alabama, and Mississippi for the year 1950 are shown in Table 4.

TABLE 4
EAST SOUTH CENTRAL 1950

Sepsis	87
Toxemia	198
Hemorrhage	118

Here it will be noted that "toxemia" is by far the most responsible cause of death and the same is true for Tennessee in 1952 as shown in Table 5. Death certificates, however, never tell the whole story because only the principal cause is taken in compiling statistics.

TABLE 5
MATERNAL DEATHS 1952
Tennessee

Toxemia	36
Infection	15
Hemorrhage	13
Complications	7
Others	25
Total	89

Could it be that inadequate prenatal care due to lack of education and cooperation among the negroes would account for this prominent toxemic factor in these East South Central states?

Drs. Fitzgerald and Webster of Chicago made a study of maternal mortality at Cook County Hospital and the principal causes of death are listed in Table 6. If one considers the fact that a great many of these deaths listed under abortion and ectopic were due to hemorrhage, as one must, then hemorrhage has been by far the principal cause of maternal mortality at Cook County Hospital for this period of 19 years.

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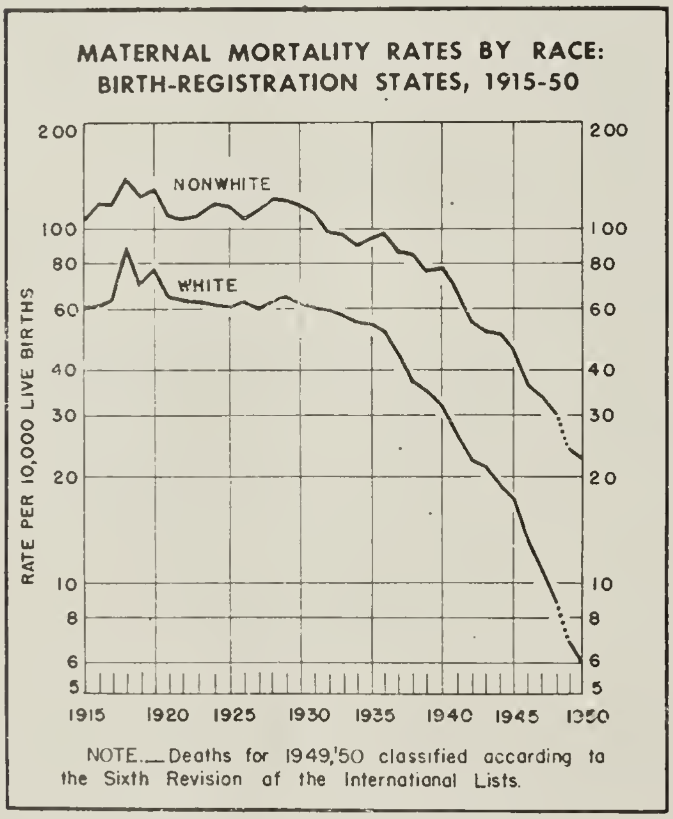
*Presented at the sixty-fifth annual meeting of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 9, 1954.

TABLE 6
COOK COUNTY HOSPITAL DEATHS
Fitzgerald and Webster 1953
104123 *Live Births* 19 years

Sepsis	88
Abortion	171
Hemorrhage	49
Ectopic	38
Toxemia	53
Heart	33
Pyelitis	17
Anesthesia	13
12 other causes	112

Everyone is aware of the fact that maternal mortality as a whole has steadily decreased ever since President Herbert Hoover called his White House Conference on Maternal and Child Welfare in 1931 as shown in Table 7.


MATERNAL MORTALITY RATES BY RACE: BIRTH-REGISTRATION STATES, 1915-50

NOTE.—Deaths for 1949,'50 classified according to the Sixth Revision of the International Lists.

But when the decrease in hemorrhage deaths is compared with the other principal causes and their decrease, hemorrhage stands out as the subject needing most attention. A report from Shreveport Charity Hospital by Dr. C. R. Mays is a good example of this.

TABLE 8
SHREVEPORT CHARITY HOSPITAL
C. R. Mays

Maternal Mortality 1941-45	0.39%
Maternal Mortality 1946-51	0.14%

34% decrease in hemorrhage
89% decrease in sepsis
63% decrease in toxemia
67% decrease in accidents

Sepsis, toxemia and accidents have all shown decreases twice that shown by hemorrhage.

What then are some of the things that can be done to cut off "this broad stream of blood that keeps pouring through our maternal death statistics ?

There is not space enough here to cover all the necessary components of good prenatal care so essential in bringing the patient to term in good condition such as anemia, toxemia, focal infection, nutrition, prevention of exhaustion and personal attention. Some of the components of our care of pregnant women that need more attention and that will result in lowering mortality are as follows:

1. *Prevent loss of blood* whenever possible and give the pregnant woman losing blood constant personal attention until the hemorrhage is under control and her condition is satisfactory and stable.
2. *Replace her blood quickly.* A pregnant woman is subject to an anemic infarct of her markedly changed pituitary gland and she can not lose blood rapidly or profusely without danger of the fatal collapse which comes with it. Sheehan first demonstrated this fatal process in pregnant women in 1937 and reported 60 cases in the *Journal of Pathology and Bacteriology*, Vol. 45; page 189 in 1937. Since then hundreds of other cases have been reported in the medical literature and we now are quite aware of this condition. War casualties and street accidents, where hemorrhage is severe and men and women are brought in almost completely bled out, are not subject to this anemic infarct. No cases were reported in World War I or II. A pregnant woman, however, is a far different individual and quick replacement of her blood is mandatory. Even where blood is given and given too late she will go on and die three, four, or five days later in spite of transfusions.
3. *If a large, well-stocked blood bank is not available* then replace her blood without grouping and matching by using RH negative, type "O" blood with 10 cc. of Witebsky's A. and B. substance added. It can be poured like glucose or salt solution and with a lower reaction rate than matched blood. Every hospital in Chicago received a directive from the health commissioner that it was to have constantly on hand two flasks of RH negative type "O" blood and two 10 cc. vials of Witebsky's specified A. and B. substances to add to it. Boston Lying-in

Hospital has used only "O" blood with suitable RH factor and Witebsky's A. and B. for over six years. They will not use matched blood because they have a much lower reaction rate with this combination and in a recent personal conversation with both Dr. Duncan Reid and Dr. Arthur Hertig I learn that they intend to continue its use. The average hospital takes an hour to get blood into a patient at night whereas if some "O" negative blood is in the refrigerator on the delivery room floor as it is at Boston Lying-in, all one has to do is inject 10 cc. of Witebsky's A. and B. into it with a hypodermic syringe, shake it well, and start transfusing.

4. *Bleeders.* What about the premature separation of the placenta or the possible injection of amniotic fluid into the circulation in some cases of fulminating labor where the fibrinogen apparently disappears? There are cases of hemorrhage that keep on bleeding in spite of eight, ten or twenty flasks of blood and hysterectomy can not even be attempted. Tables 9, 10, and 11 give a short outline of this problem and some of the newer procedures that are yielding good results and that are being worked out in many of our leading research centers. They have both saved lives when replacement alone has not shown any promise of success.

5. *An intact coagulation mechanism is absolutely essential.* No one should start into a hysterectomy until he is sure of the patient's blood clotting ability and blood is already running. The sudden depletion or disappearance of fibrinogen is not the entire answer because it is only one necessary blood component, and transfused blood may either lose its own components under the circumstances or not be able to create an adequate supply.

6. J. Garrett Allen, at University of Chicago Billings Hospital, has done a great deal of research on this problem as has Dr. Duncan Reid of Boston, also. Dr. Allen takes 2 cc. of free flowing blood after the tourniquet has been released and before adding thrombin notes its color for practical purposes. In most of these bleeders this blood will be quite dark. To this is added about 100 units of thrombin topical and *if it clots* well in a few minutes the patient does not need fibrinogen and to these patients he gives 50 mg. protamine sulphate (Lilly) per vein and 50 mg. intramuscularly repeating the latter every 4 hours and also, 500 cc. of toluidine blue solution 0.1% (Abbott) (not distributed) by vein. This procedure I can attest to personally as it saved one of my patient's life, the mother of three.

If on the other hand the addition of 100 units of topical thrombin to 2 cc. of the patient's blood does not cause a firm clot, then fibrinogen is indicated. Reid administers 2 grams of fibrinogen or paranogen (Cutter), which is the same thing, in 300 cc. of 5% glucose over a period of 20 minutes per vein and repeats it twice at two-hour intervals.

Every hospital doing any amount of obstetrics can have on hand these various blood components and the other chemicals mentioned and every center even without a hospital should be able through charity organizations, to have available type "O" blood, both RH negative and positive and vials of Witebsky's A. and B. substances to add to it so that no hemorrhage case need lose her life.

TABLE 9

COAGULATION in HEMORRHAGE

Duncan Reid

1. An intact coagulation mechanism is necessary.
2. Blood changes causing incoagulable blood in
   a. Separation of placenta.
   b. RH Negatives with dead fetuses.
3. Hysterotomy and hysterectomy only *after* blood clotting ability has been determined or proper supplies are being assembled.

TABLE 10

J. Garrett Allen
University of Chicago, Billings Hospital

Draw 2 cc. free flowing venous blood.
(Normal blood will not be dark.)
Add 1/10 ampoule (or 100 units) thrombin topical
IF IT CLOTS use
50 mg. Protamine Sulphate (Lilly) P. V.
50 mg. Protamine Sulphate I. M. and repeat I. M. q. 4 hrs.
Toluidine Blue 0.1% 500 cc. (Abbott) Solution P. V. also (if available).

TABLE 11

If blood with thrombin added does *not clot*
Administer 2 grams fibrinogen slowly
(300 cc. 5% glucose 20 min.)
Repeat q. 2 hrs., twice P.R.N.
Paranogen (Cutter) is trade name for fibrinogen.
Fairly well distributed. Expensive!

The Medico-legal Problems of the Central Scotomata*

MORRIS DAVIDSON, M.D.†
Jackson, Mississippi

Now that the state of Mississippi has a Workmen's Compensation Act, the medico-legal aspects of injuries to the visual apparatus are of more than academic interest to Mississippi ophthalmologists. However, whether an eye injury is subject to Workmen's Compensation, to War Veterans Pension Laws, or to Common Law Liability, and whether he examines inductees for the Armed Forces, the ophthalmologist performs the very important function in human society of aiding the administration of justice. Adjudication of a case by the law officers administering these laws or by draft boards is possible only with the honest help of the expert ophthalmologist, who takes an oath to tell the truth, all the truth and nothing but the truth. His job is to measure accurately the functional impairment, or the damage done; locate the site of the lesion responsible for the damage, or make an anatomic diagnosis; and finally to determine the etiology of the damage, and whether it is causally related or not to the accident or war injury. This is the field of legal ophthalmology. Industrial ophthalmology is primarily concerned with prevention of accidents. The treatment of injuries is the same, whatever the cause.

Compensation and pensions are assessed for impairment of one or more of the three principal visual functions: central visual acuity, peripheral vision, or visual field, and binocular single vision, better described as binocular depth perception, or stereopsis, within the normal limits of the binocular motor field. Both visual field and stereopsis exploration are generally honored more in the breach than in the observance, probably because their study has been needlessly made too cumbersome and complicated. Walsh in his *Clinical Neuro-ophthalmology*[1] calls attention to the adequacy of the simple confrontation methods for fields. One of the purposes of this paper is to simplify the examination for binocular stereopsis.

About 95 per cent of all awards for eye injuries are in terms of impairment of central visual acuity. In the remaining 5 per cent awards are made for loss of one of the other functions alone, or in combination with central visual acuity loss. The American Medical Association appraisal formula for eye injuries provides for the testing of binocular vision in all cases. Not only is this not often observed in practice as apparently unnecessary, but the A. M. A. formula is probably in use either by law or regulation in only one-third of the states. In other states, the definitions of industrial blindness of an eye may vary from 20/100 to 20/400 visual acuity. The appraisal of central scotomata is usually made in terms of central visual acuity without due consideration of the fact that it is an eccentric visual acuity, and may involve binocular depth perception as well. Reduced visual acuity from media disturbances or high errors of refraction, in which fixation is central, but with diffusion of images, is accompanied by a somewhat parallel reduction of binocular depth perception acuity, and the latter is predictable. With reduction of visual acuity to 20/400 in one eye, and normal vision in the other, it can be demonstrated, for instance, that binocular depth perception is lost, but that it is not lost with reduction to 20/200 visual acuity in one eye, in cases of central fixation. In eccentric fixation, by the edge of a central scotoma, the situation is not the same, for various reasons not yet clear to the writer, and visual acuities as good as 20/50 may be encountered with loss of binocular depth perception, and 20/400 visual acuities may be encountered with preservation of binocular depth perception. For some time I have been paying more attention to this problem of the appraisal of the central scotomata, by a more adequate clinical study of them and by some preliminary experiments to find the limits of binocular extrafoveal depth perception. I should like therefore to discuss briefly, this aspect of the group of cases in which the central scotomata appear; namely, the amblyopias, macular lesions, and retrobulbar optic nerve and chiasm lesions.

The amblyopias, or eyes with defective visual acuities not correctible to the "normal" of 20/20, but without obvious pathology in media, fundi, optic nerve or chiasm; and without strabismus, high ametropias (1/20 of all errors of refraction) and anisometropias to account for them, constitute the bulk of the anatomic and etiologic diagnostic problems which present themselves to the examiner for compensation or pensions or for induction in the Armed Forces. The contingent is smaller among war veterans than among industrial workers coming under the jurisdiction of Workmen's Compensation, because the former are screened at induction, while only large industries screen their employees for visual defects. However, because of the standard requirement of 20/40 visual acuity for the Army, about 25 per cent of the visual defectives will slip into the Army. According to Downing[2], one-third of them are amblyopias not accountable on an organic basis, and one-third of them amblyopias due to strabismus. The least problem in the experience of the writer, but which looms so large to the beginner, is presented by malingering and hysteria (less than one per cent of all eyes examined).

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*Presented before the Section on Eye, Ear, Nose and Throat at the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

†The statements and conclusions are those of the author, and do not necessarily reflect the opinions or policies of the Veterans Administration.

Central scotomata, with eccentric fixation, characterize all the amblyopias as well as the subnormal vision found in macular and optic nerve and some chiasm lesions, and are encountered either as uniocular or as binocular conditions. The uniocular cases are the more frequent ones. The uniocular ones are of course mainly the amblyopias ex anopsia. About one-half of the esotropias either are "outgrown" or have been operated on by the third decade of life, and often without remaining esotropia by the cover test. Some have a readily overlooked esotropia of less than 3 degrees. It should be borne in mind that esotropias are four times as common as exotropias, and amblyopias ten times as common in esotropias as in exotropias. The visual acuities of the ex anopsia amblyopias may be as low as 20/400 and as good as 20/30. With few exceptions, there is absence of binocular depth perception, deviation of the amblyopic eye in uniocular fixation to find an eccentric retinal spot, and shifting or displacement of the blind spot to correspond with the deviation. The displacement of the blind spot in campimetry has been found useful in plotting the scotoma and in differential diagnosis. Often there is found a wider pupil, better demonstrated in dark room after occluding good eye, when amblyopic eye pupil becomes maximally dilated even when illuminated (Marcus Gunn or Kestenbaum sign), and at times an insufficiency of convergence suggestive of an internal rectus weakness is noted in an amblyopic eye. Anisometropias account for a small number of amblyopias, a 2 diopter difference being responsible often for a reduction of visual acuity to 20/40, a 4 diopter difference to 20/100, and one of 6 diopters to that of 20/200 to 20/400. Congenital anomalies, as an inferior conus, may cause an amblyopia with an arcuate cecocentral scotoma. Anisoeikonia may also be the cause of amblyopia.

A small contingent of the central scotomata with eccentric fixation is represented by macular lesions, macular lesions acquired at birth, from contusions in childhood at play, from looking at sun, from infectious central choroiditis, and by head injuries productive of uniocular optic nerve lesions. Cases of eccentric fixation, it should be noted, may simulate heterotropias and heterophorias, except that in heterotropias and heterophorias, the fixation movement is to find the fovea, while in eccentric fixation the fixation movement is away from the fovea and its visual axis. The writer has confused them and has noted the same confusion by others.

Binocular central scotomata may present themselves as early as one or two years, before ophthalmoscopically visible changes in macula or nerve head. In hereditary macular dystrophy there may be central or paracentral scotomata, while in hereditary optic neuropathies and in optochiasmatic lesions we usually find ceocentra scotomata. The visual acuity may be unequally reduced in the two eyes, is often variable and inconsistent, and gives rise to suspicion of malingering or hysteria. It is worth noting that the hereditary etiology of macular and optic nerve lesions is more and more being recognized, and alongside of intracranial neoplasms, industrial and war exposure intoxications are replacing the previously invoked focal infections, sinusitis, multiple sclerosis, lues. Of special interest to those who examine the war prisoner veterans are the bilateral nutritional and intoxication amblyopias from avitaminosis, inadequate dietary, and adulterated alcohol and tobacco. Seven per cent of POW exhibited it in the last war, and 10 per cent of those resulted in optic atrophies.

Among the rarer forms of binocular central scotomata to be noted are: retinitis pigmentosa, with or without pigment, and with night blindness, and need for as much as fifty times more illumination to see with than the normals; the totally color-blind individuals who prefer reduced illumination and are therefore day-blind; the nystagmus amblyopias, often with albinism, and those resulting from anemia after repeated loss of blood by small hemorrhages, mainly from gastrointestinal tract.

Now a person with a central scotoma in one or both eyes obviously cannot possess foveal binocular stereopsis, and can only achieve it by a conjugate deviation of both eyes to get beyond the boundary of the scotoma or scotomata, provided the extrafoveal retinal areas are not beyond the peripheral limits of binocular depth perception. In terms of the performance test for binocular depth perception, described by the writer[3,4,5] and used by him for many years in many thousands of cases, the peripheral limits of binocular depth perception are 5 degrees from fovea. Visual acuity at that point is already only 20/200. This means sacrificing the visual acuity of the good eye in a uniocular case. Hence, depending on the nature of the individual's occupation or particular desire for stereopsis in early youth, many persons will not achieve stereopsis.

In the central scotomata the loss or absence of binocular depth perception is likely to go unnoted unless one is depth-perception-minded and routinely incorporates a test for the presence of binocular stereopsis in his examinations, as this examiner has been doing for many years. The A. M. A.-recommended method of plotting diplopia or fixation is clearly not applicable in this situation, where there is no diplopia.

DEPTH PERCEPTION PERFORMANCE TEST

There is a very simple method for determining the presence or absence of binocular depth perception. Used without regard to certain details, it is crude and unreliable. With attention to the simple detail of size of test-object, and to distance of the fronto-parallel plane of performance, it becomes an instrument of precision. For a better understanding of the subject of stereopsis, the notion that it is possible only with two-eyed vision should be discarded, and the notion substituted, that it is possible with one eye as well as with two eyes, and that the difference is quantitative only; i.e., that there is a different threshold of binocular stereoscopic acuity from that of uniocular stereoscopic acuity. If the test object is made six or more times larger the uniocular person or one with one eye excluded can perform the task adequately. The validity of the test to be described for determining absence or presence of binocular depth perception or stereopsis can be readily checked by exclusion of one eye and repeating the performance. Obviously a task which can be performed with use of both eyes and cannot be performed by the use of one eye is a test for the use of both eyes. With this test no habituation to the loss of one eye, in the sense of achieving eventually the high threshold of stereoscopic acuity of two eyes, has been observed by the writer.

Briefly described, the test is performed as follows: The subject is handed a dark rod on which is mounted a white round pinhead of 2-3 mm. diameter on a thin dark shank. The observer holds a similar object and demonstrates his ability while facing the subject or on one side of him, to make the two pinheads meet by touching them, not by hitting them, at 50 cm. or at arm's length. This is done in the fronto-parallel plane, and the subject approaches the examiner's pinhead from a distance of about 15 cm. either above or below the examiner's object, but preferably from below. The subject is asked to perform the same test three times in the primary position and in the cardinal positions of gaze, in order to establish the presence or absence of binocular stereopsis, not only in the primary position, but the integrity of the function of all the extra-ocular muscles. If one wishes to plot the field of diplopia, or of suppression of binocular stereopsis, this is done by making subject face a tangent curtain or the industrial motor field curtain recommended by the A.M.A. The subject's head is immobilized by the free hand of the observer during the procedure so that only the eyes and not the head are moved for the cardinal direction of gaze. Practically one can dispense with the screen, since if one keeps beyond the planes of the lateral and vertical boundaries of an adult head at 50 cm one is beyond 15 degrees from the primary position. The observer changes distance a few inches for each test, in order to exclude the muscle sense factor. A successful performance means the presence of at least a high threshold of binocular stereopsis. Care must be taken not to allow the examinee to place the rod sagitally and utilize his direction perception as a clue to distance. The examinee holds his rod as vertically as possible, and is instructed to make a bee-line for the examiner's pinhead.

This simple performance test for binocular depth perception is, of course, negative in amblyopia ex anopsia, in many cases, where the squint has been "outgrown" spontaneously or from orthoptic exercises, in amblyopias from anisometropia, in most cases of eccentric fixation, without correlation with visual acuity, and in the field of diplopia or suppression in paralytic strabismus. In most cases of divergent strabismus and in some cases of esotropias of less than 7 degrees, it is positive. Possibly these esotropia cases observed were really eccentric fixation cases before I realized the possibility of confusing them with esotropia, as I have, since paying more attention to the behavior of central scotomata in regard to stereopsis, observed myself, and others also to have done.

The advantages of this simple objective test are: 1) It does not suggest diplopia to patient. Diplopia is a subjective perception susceptible of misinterpretation and of simulation; 2) it is applicable when suppression has set in following paralytic strabismus, and diplopia cannot readily be elicited; 3) it dispenses with use of red glass which exaggerates naturally the field of diplopia by breaking up fusion in the zone of latency or heterophoria lying between the zones of single and double vision; 4) it is applicable to persons of low intelligence and illiterates; 5) it lends itself to demonstration before non-medical juries and judges of the functional disability present; and, 6) it can be applied to eccentric fixation cases where diplopia charting is not possible. It has been found by the writer to be simple and accurate and speedier than any other method used. The cover test should of course be used in all cases as a check, bearing in mind that while a one-degree vertical heterotropia will not be overlooked, a similar one horizontally is readily overlooked and may in some cases produce loss of binocular stereopsis.

(*Slides of illustrative cases, movie and demonstration of performance test for depth perception.*)

DISCUSSION

Dr. Stirling S. McNair, M.D., Jackson—I have greatly enjoyed this paper by Dr. Davidson, whom I have worked with for the past four years. He is a deep thinker as well as an astute ophthalmologist, and has written many original articles for the ophthalmology journals. He brings to us a practical subject, which is often neglected in our busy practices, and shows us a quick method of determining whether a patient has binocular single vision. The determination of this is important in our daily practice, but is especially important in injury and compensation cases. The Workmen's Compensation Board in Mississippi, as well as in most states in this country, consider loss of binocular single vision equivalent to the loss of one eye.

Dr. Davidson in his paper makes some very important points. It is possible to have binocular single vision with visual acuity as low as 20/200 to 20/400, if the diminution of vision is due to changes in the media. Rarely is binocular single vision present if vision is below 20/50, if due to macular pathology, nerve pathology, or muscle imbalances. It is rarely possible to have binocular single vision if the central scotoma is larger than 1 degree and often a patient with a scotoma of ½ degree will not have binocular single vision.

It is particularly important in old cases of esophoria where the eyes are straight and are possibly only slightly in under cover that the test for binocular single vision be used, as many of these cases have eccentric fixation and loss of binocular single vision. I think it is most important that small test objects be used to definitely outline a small central scotoma.

I have used the test, as outlined by Dr. Davidson, with the pin on the shaft and find it a quick, simple, and easy test to perform. I would highly recommend this test to you. This test also is of value in determining which muscle is paralyzed in paralytic strabismus. The patient who has a paralytic extraocular muscle cannot touch the pins together satisfactorily in the field of greatest action of the paralyzed muscle. In performing this test, care should be taken that the patient's nose does not obstruct one of the pins when placing the pins in some of the cardinal positions of gaze. In addition to this test in paralytic strabismus, the cover test should always be used.

Some of the advantages of this test are that it takes a very short time to perform, is an objective test, and is easily done in children and patients with a low intelligence quotient. I would highly recommend this test to you.

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The Role of Tracheotomy in the Treatment of Eclampsia*

JAMES E. SAFLEY, M.D.
Brookhaven, Miss.

During the twelve-month period of time from June 23, 1951, through June 30, 1952, I was directly responsible for the treatment of 1634 obstetrical patients who were delivered. Of these, six were convulsive toxemia patients. I feel that my recent experiences with these eclamptic patients might be of interest, and this paper is presented to emphasize the importance of tracheotomy in the management of eclampsia.

Tracheotomy has been reported of therapeutic value in such conditions as tetanus[1], cerebral abscess[2], poliomyelitis[3], coma in a variety of medical conditions[4], and in the management of severe head injuries[5]. Echols believes that the use of tracheotomy aids materially in reducing the complications of hypoxia and/or anoxia in cases with severe head injuries, thus increasing the survival rate of such cases

Of course prevention of eclampsia by close observation and good medical care is to be desired, but there is ever present the possibility of an acute fulminating case of toxemia in the patient who never sought medical care until after the onset of convulsive toxemia.

Faced with the management of convulsive toxemia, I best controlled the convulsions with deep sedation by using sodium amytal, morphine, phenobarbital, and demerol, alone or in combination, seldom using magnesium sulfate. Intravenous fluids consisting of 10 per cent glucose in distilled water were administered by replacing the urine output plus the insensible loss which was usually estimated at 1000 to 1500 cc. daily.

After the convulsions were controlled, the fluid balance maintained, and the blood pressure lowered by the above management, there was almost inevitably marked respiratory distress as evidenced by a depression of respiratory rate, depth of inspiration, pulmonary edema and retained secretions in the tracheobronchial tree. Occasionally the patient was having laryngospasm. These factors usually led to hypoxia.

Collins, Nix, Dyer and Webster[6] state that the pathological physiology of hypoxia due to tracheal obstruction results from the increased demands for oxygen by the body as a result of the violent respiratory efforts exerted to overcome the obstructed pathway, an increase in the intrathoracic venus pressure due to these efforts, and the transmission of this increase to the cerebral veins and sinuses. The carbon dioxide content of the blood may be increased. These combined physiologic disturbances result in the hypoxia of the cerebral vascular epithelium which in turn results in increased permeability of this membrane. The tendency to edema is thus increased. This vicious cycle which results from partial tracheal obstruction further increases venous congestion, increases the cardiac load, and may eventuate in cardiac decompensation. Pre-existent or concomitant heart disease further increases the possibility of cardiac decompensation. Intracranial pressure increases and in time, as a result of the changes of carbon dioxide and oxygen tension, the increased intracranial pressure and the edema of the brain depress the medullary respiratory center. This further embarrasses the already deficient respiratory tract.

It was not at all unusual to notice rather marked respiratory distress, hypoxia and cyanosis in the patients with eclampsia. Therefore, almost without exception five or six consecutive patients with convulsive toxemia and one patient with non-convulsive toxemia were given the benefit of tracheotomy.

The results were most gratifying, for after the tracheotomy was done the respiration of these patients approached normal in regard to rate and depth, the blood pressure and pulse rate were more satisfactorily controlled with much less sedation, and there was an almost immediate increase in their urinary output.

The following cases are briefly reported as evidence that tracheotomy has a definite beneficial role in the treatment of eclampsia. All were admitted to Hughey P. Long Charity Hospital in Pineville, Louisiana.

CASE 1—V. S. 35-year-old colored gravida III para I. Admitted November 24, 1951. She presented herself for admission because of headaches, scotomata and generalized edema. Blood pressure was 200/100. She was not in labor. 4 plus albuminuria was present. In spite of heavy sedation she had an eclamptic convulsion two hours after admission. Breathing became very labored in spite of nasal oxygen and suction. An emergency tracheotomy was done with complete relief of the respiratory difficulty, the pulse rate lowered and the blood pressure dropped to 120-140/90-100. About 12 hours later cesarean section was done and a 5 lb-5 oz. healthy female infant delivered. Her postpartal course was uneventful, the tracheotomy tube removed on the fourth postoperative day, and the patient discharged on the eleventh postoperative day.

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*Presented before the Section on Obstetrics and Gynecology of the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

CASE 2—I. S. 28-year-old colored gravida IV para III. Admitted January 20, 1952 with a diagnosis of eclampsia, having had three convulsions prior to admission. On admission blood pressure was 150/-120. pulse 120 and respiration 34. Fetal heart tones were not heard. Her urine contained only a trace of albumin. In spite of an airway, nasal oxygen and suction, the patient appeared quite cyanotic after controlling the convulsion with intravenous morphine and luminal. Shortly after admission a tracheotomy was done after which the patient breathed with absolute ease and the cyanosis disappeared but the pulse rate and blood pressure remained elevated. About four hours after admission she was delivered of a normal healthy, though sleepy, 4 lb.-5 oz. female infant. The tracheotomy tube was removed on the fifth postoperative day and the patient discharged on the eighth postoperative day.

CASE 3—M. G. 36-year-old colored gravida VI para V. Last menstrual period July 10, 1951, expected date of confinement April 17, 1952. Admitted January 31, 1952 with blood pressure 170/80, generalized edema and one plus albuminuria. Twenty-four hours after admission, in spite of heavy sedation, her blood pressure ranged from 200-220/100-150. An attempt was made to induce labor by rupturing membranes and giving intravenous pitocin. About four hours after the attempted pitocin induction she had an eclamptic convulsion which was controlled with intravenous sodium amytal. Because of respiratory difficulty a tracheotomy was done with complete relief of the difficulty. While on the operating table her pressure dropped to 110/60. and the pulse rate which was already elevated became more elevated. Examination revealed the uterus to be rigid, vaginal bleeding, and an absence of fetal heart tones which had previously been heard. A diagnosis of abruptio placenta was made, and under local anesthesia a cesarean section was done. The placenta was found to be totally separated, the fetus dead, and the uterus contained approximately 500-700 cc. of fresh blood. The tracheotomy tube was removed on the third postoperative day and the patient discharged on the fourteenth postoperative day.

CASE 4—V. H. 18-year-old colored gravida 1 para O. Admitted June 14, 1952. Last menstrual period not known, however, she was thought to be near term. She had been convulsing "for about six hours" prior to admission. On admission her blood pressure was 160/100, she had four plus albuminuria and generalized edema. She was in marked respiratory difficulty, was bleeding vaginally, had a rigid uterus. and was comatose. Five minutes after admission a tracheotomy was done and immediately following that a cesarean section was done under local anesthesia, delivering a 7 lb. 4 oz. stillborn. The tracheotomy tube was removed on the fourth postoperative day and the patient discharged on the eighth postoperative day.

CASE 5—E. R. 32-year-old colored gravida VIII para VII. This patient was delivered at home by a midwife June 13, 1952. She was admitted June 15, 1952 in coma and marked respiratory distress. The person that brought her to the hospital stated that the patient complained of inability to see, and that she had been having "one fit after another." A tracheotomy was done immediately with relief of the respiratory difficulty. The tracheotomy tube was removed the fifth postoperative day and the patient discharged on the eleventh postoperative day.

CASE 6—Note: This is a case of non-convulsive toxemia in which I feel the tracheotomy was a life saving procedure. D. B. 19-year-old colored gravida I para O admitted June 23, 1951 approximately 36 weeks pregnant. She had marked hypertension, proteinuria, oliguria, and edema. Sedation and intravenous fluids were administered. Twelve hours later nasal oxygen was started as respiration had become very labored and shallow. Shortly thereafter respiration decreased to 3 to 4 per minute. An emergency tracheotomy was performed with the patient still in her bed, and immediately her respiration became near normal. Soon afterward a cesarean section was performed, using local anesthesia. She was delivered of a live premature infant. On the sixth postoperative day, the tracheotomy tube was removed and the patient was discharged on the twentieth postoperative day.

COMMENTS

Of the 1634 patients delivered, there were five with convulsive toxemia. One convulsive toxemia patient was admitted, delivered spontaneously shortly afterward and failed to exhibit evidence of marked respiratory difficulty, thus no tracheotomy was performed. One of the six cases reported was admitted as a postpartal eclamptic and one was a nonconvulsive toxemia patient. There were no deaths from convulsive toxemia and there were four live births from a total of six eclamptic patients.

CONCLUSIONS

1. Tracheotomy should be considered as a valued adjunct in the management of eclampsia.

2. It is of value in some nonconvulsive toxemia states.

3. It may mean the difference between life and death in those cases which develop hypoxia, cyanosis and laryngospasm.

4. Every modern delivery unit should be equipped with tracheotomy sets.

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DISCUSSION

Dr. William A. Colmer, Jr., (U. S. Naval Hospital, Pensacola, Florida)—We are indebted to Dr. Safley for reminding us that tracheotomy in eclampsia will improve the respiratory exchange. As best I can determine, the use of tracheotomy in eclampsia is a new procedure, and the first report was published only two years ago.

It is not unusual for the eclamptic patient to develop a partial mechanical obstruction to respiration. Mucus accumulates in the nasopharynx and the tracheobronchial tree. In the convulsive patient with pulmonary edema pharyngeal mucus can easily be removed by nasal or oral suction, but tracheal mucus can be reached only through an endotracheal tube or a tracheotomy. An unobstructed airway should benefit these comatose patients and Dr. Safley has confirmed this observation. In all of his patients there was a general improvement after the tracheotomy has provided for a satisfactory aeration of the lungs.

Because we do not have an ideal treatment for the cause of eclampsia, we must treat the disease symptomatically.

The symptomatic treatment of eclampsia must provide an adequate airway, diuresis, termination of convulsions and lowering of blood pressure. We all realize that lowering of blood pressure is the most important part of our treatment, because vasospasm is the underlying cause of eclampsia. Vasospasm results in decreased urinary output, hypertension, cerebral anoxia and vascular permeability which in turn produces cerebral edema, coma and convulsions.

Most of us use "heavy sedation", usually morphine and the barbiturates, to lower the blood pressure, but I am sure no one is satisfied with this approach. We realize that we are producing the conditions that require the use of a tracheotomy. The patient already has a reduced level of consciousness and we reduce it even more with barbiturates and morphine.

Those who advocate the use of veratrum alkaloids maintain that the vasoconstriction of eclampsia can be relieved by veratrum and that the respiratory depression accompanying the use of barbiturates and morphine is therefore unnecessary. They report that following the relief of angiospasm, convulsions cease and diuresis occurs. Recently, apresoline has been used to obtain vasodilatation in the toxemia patient. However, apresoline and veratrum have not received wide acceptance. When we do have a safe practical method of relieving vasoconstriction, the symptomatic measures of anti-convulsants, diuretics and artificial airways will not be necessary.

While we await a specific treatment of eclampsia, we have the problem of managing the eclamptic after we have controlled the convulsions. Some of these patients are sectioned immediately, but the best results are not obtained by that approach. When treatment has produced a lower blood pressure and cessation of convulsions, it is desirable to observe the patient for about 24 hours and then consider the best method of terminating the pregnancy. If not, labor should be induced if the cervix is favorable. If the cervix is not favorable, cesarean section should be performed. Section is necessary in only a few cases of convulsive toxemia. Cesarean section, while the patient is still in the convulsive state, carries a high mortality.

Dr. Wm. B. Wiener (Jackson)—I am discussing a paper on a procedure which I have never used nor seen used.

The only previous knowledge that I have about tracheotomy in the treatment of eclampsia is derived from a paper delivered by Dr. Collins at Detroit in September, 1951. This was later published in the *American Journal of Obstetrics and Gynecology*. In this paper, Dr. Collins stated that he advocated tracheotomy in patients whose respiratory distress was unrelieved or unimproved by the use of metal or rubber airways, or by repeated aspiration of the pharynx, larynx and trachea, or who were unrelieved by the use of oxygen by mask or nasal catheter. There was no definite time limit as to how long patients were watched before deciding whether a tracheotomy was necessary. Dr. Safley used tracheotomy in the treatment of five out of six of his patients.

We have no specific treatment of eclampsia as evidenced by the numerous papers on different treatments. Prevention as in any disease of course is easier and better than treatment after convulsions have occurred. In my personal experience, I find sedation and fluids as outlined by Dr. Safley excellent therapy. By excessive administration of fluids you can definitely drown a patient and she will have respiratory difficulty. Within twenty-four hours after the control of convulsions, delivery should be attempted by the easiest method for the patient. While Dr. Safley reports that four of the six patients were delivered by Caesarean section, I am sure that he does not advocate Caesarean section delivery of eclamptic patients except where another obstetrical reason exists, as it is usually, very easy to induce them and deliver them vaginally.

I feel that by careful treatment and watching the patient closely, tracheotomy will not be indicated too often. However, if at any time the patient shows evidence of respiratory distress or if clearing of the tracheobronchial tree is difficult, I would not hesitate to have a tracheotomy done.

Dr. Safley has shown us an additional therapeutic procedure in the management of the eclamptic patient and it should be used whenever upper tracheal obstruction is unrelieved by other methods.

§

Common Types of Laryngeal Obstructions*

CECIL S. FRANKS, M. D.
Tupelo, Miss.

Anatomy and Physiology

Briefly the larynx may be said to consist of that part of the airway between the hypopharynx above and the trachea below. It is composed of elastic membranes and a semi-rigid skeletal system of cartilages. These are three pairs of small cartilages; the arytenoids, corniculate and cuneiform; and three large single ones, the thyroid, cricoid and the epiglottic.

The laryngeal muscles may be divided into two groups. The extrinsic group are attached to the hyoid bone and are least important in the actual function of the larynx. The intrinsic group of muscles are composed of nine muscles, four in pairs and one appearing singly. They are concerned with opening and closing of the laryngeal aperture and with phonation.

The nerve supply is composed of the superior laryngeal nerves which are sensory with exception of a branch to the crico thyroid muscle. The inferior or recurrent laryngeal nerves from the vagus are the motor nerves to the intrinsic muscles to the larynx.

Symptoms of obstruction in varying degrees come from many causes. For simplicity they may be divided into four categories:

I. Mechanical
    A. Foreign bodies
II. Anatomical
    A. Stenosis
    B. Acute injuries
    C. Vocal cord paralysis
    D. Allergy
    E. Edema of larynx from other causes
III. Neoplastic
    A. Malignant
        1. Carcinoma
        2. Sarcoma
    B. Benign
        1. Angiomas
        2. Fibromas
        3. Polyps
        4. Lipomas
        5. Chondromas
        6. Granulomas
        7. Hyperkeratosis
        8. Papillomas
        9. Cysts
IV. Inflammatory
    A. Acute laryngitis, non-specific
    B. Diphtheria
    C. Chronic laryngitis, specific and non-specific

In the absence of history a foreign body may be suspected when there is a sudden onset of hoarseness, croupy cough, choking aphonia, wheezing, cyanosis or dyspnea. Symptoms may let up and reoccur. Fatal asphyxia may result when the lumen is entirely obstructed. Death may occur from laryngospasm as a result of placing the head down, as is often done, even if the foreign body is small enough to go into a main stem bronchus.

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*Presented at the quarterly meeting of the Northeast Mississippi Medical Society, Columbus, Miss., March 10, 1953.

Differential diagnosis in a laryngeal foreign body that has not caused acute symptoms include diphtheria, non-specific laryngitis, and laryngismus stridulus. X-rays will show metallic or opaque foreign bodies lying in the anteriorposterior plane. A flat object seen in the lateral plane will be in the upper esophagus.

Treatment in children usually requires direct laryngoscopy without anesthesia and removal with suitable forceps. If symptoms are acute as in the case of complete obstruction with a large foreign body, removal with the tip of the finger with the head down may be life saving. In adults foreign bodies may be removed by indirect laryngoscopy in the majority of cases. However, these will usually be non-obstructing objects such as fish bones, pins and so on.

Laryngeal stenosis may be due to congenital malformations and vary from complete atresia, which is incompatible with life, to small webs and clefts. Acquired stenosis of the larynx in years past has been fairly common following intubation in the treatment of diphtheria. Recent therapy favors removal of membrane by laryngoscopy and point suction and tracheotomy in more severe cases. Tracheotomy for any cause should preferably be through the second and third or the third and fourth tracheal cartilages. High tracheotomy may injure the cricoid cartilage with a subsequent perichondritis and stenosis.

Injury to the skeletal framework is often a cause of stenosis. Especially is this true of gunshot wounds. Syphilis and tuberculosis may also cause stenosis due to perichondritis and scarring.

Treatment of stenosis consists of laryngofissure and removal of scar tissue and placing a stint of hard rubber or plastic in the lumen. Skin grafting has been done with some success.

Traumatic injuries to the larynx with edema and emphysema may cause acute obstructive symptoms. Treatment consists of sedation, ice collar, voice rest and strict observation. Tracheotomy may be necessary. Some fractures of the laryngeal cartilages require internal fixation. The patient should be watched for a complicating pneumothorax.

Vocal cord paralysis causes acute obstruction when there is bilateral paralysis of both posterior crico-arytenoid muscles. Such paralysis may be caused by peripheral damage to the recurrent laryngeal nerves or damage to the basilar nuclei or pathways. The patient will have marked inspiratory difficulty with easy expiration. The patient will be able to phonate and on examination both vocal cords will remain in abduction. Treatment consists of one of various operative methods of adducting one or both cords.

Acute laryngeal edema from allergy is occasionally seen. There may be an associated asthma. Symptoms are usually alleviated by administration of epinephrine. Some drugs and airborne irritants may cause edema of the larynx. The cause should be determined and removed. Tracheotomy may be necessary.

Carcinoma of the larynx is the most frequent malignant tumor. Any patient with persistent hoarseness for any extended period should have careful laryngeal examination. Men have carcinoma of the larynx ten to twenty times as often as women. Smoking apparently has a direct relationship. These tumors are generally classified as intrinsic, being limited to the true vocal cord or extrinsic, involving other parts of the larynx also. Surgery is usually considered the treatment of choice, and the cure rate is high. If palpable glands are present neck dissection should be carried out along with a wide-field total laryngectomy. In early cases, limited to one cord, laryngofissure with partial laryngectomy is sufficient.

Of the non-malignant tumors of the larynx, I believe the juvenile type papilloma is the most difficult problem. These are frequently multiple, light pink, warty growths which are usually located along the margins of the vocal cords. They may grow at any location in the larynx or even into the trachea. Children of any age may be affected. The only symptom may be hoarseness. Direct laryngoscopy and careful removal is the treatment of choice. Repeated treatments as often as necessary should be carried out. The tendency to reoccur will cease in a few months to sometimes years. Hormones, vaccines, and drugs have failed to give appreciable results. X-ray treatment should absolutely be avoided. A serious perichondritis with stenosis may ensue. I personally know of two cases that developed carcinoma following large doses of x-ray therapy. A tracheotomy may be necessary to prevent asphyxia.

The most severe inflammatory conditions involving the larynx are diphtheria and laryngotracheobronchitis. The definite etiology of laryngotracheobronchitis is not known. Hemolytic strep, staph, pneumococcus and the influenza bacillus have been cultured. This is a sporadic disease which may occur in epidemics. It occurs primarily in children under two years old but may occur in older children or even adults. The onset of the disease may be a mild upper respiratory condition with an abrupt development of high fever and toxicity. There is acute edema of the larynx and tracheobronchial lining. Secretions are tenacious sticky at first and later becoming pseudomembranous. Atelectasis, emphysema and bronchopneumonia may develop. Culture for possible diphtheria should be done early. If there is reasonable doubt antitoxin should be given without hesitation. Treatment consists of oxygen and oxygen-carbon dioxide, a room temperature of 70° and a humidity of 95 per cent. Sedation should be given with care. Full therapeutic doses of antibiotics and chemotherapy should be given; adequate fluids and general measures are important. The patient should be watched carefully and a record kept of respiration and pulse rates. The severity of stridor and retraction should be watched. Increased restlessness is a sign of air hunger, and tracheotomy is best performed when the patient becomes restless and the respiratory and pulse rates show an increase. If obstruction of the tracheobronchial tree develops, low bronchoscopy with removal of secretions may be necessary.

Severe diphtheria which involves the larynx and tracheobronchial tree is treated in the same way except that adequate antitoxin is given. It is very important to do early smears and cultures on all such patients. Careful observation with competent and adequate nursing care is important.

Chronic laryngitis may be caused by vocal abuse, smoking, drinking, irritating inhalants, and specifically in tuberculosis and syphilis. In addition to specific measures where indicated, voice rest and avoidance of tobacco and alcohol are very important. Where there are recurrent episodes of non-specific chronic laryngitis, vocal training is indicated.

In conclusion, I would like to emphasize that in a child who develops acute laryngeal symptoms one should think of a differential diagnosis of foreign body, laryngeal diphtheria, acute laryngotracheobronchitis, or allergy. Proper care in the early handling of such cases may be life saving.

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>
> James Bryant Conant

Fractures of the Forearm*

STANLEY A. HILL, M.D.
Corinth, Miss.

THE FACT THAT the radius is broken more often than any bone in the body indicates that a large majority of doctors treat fractures of the forearm. It is believed that the seasoned practitioner would not be interested in the type of case in which good results follow the first attempt at closed reduction. Therefore, the greater part of this discussion will deal with operative cases.

ANATOMY

Before the treatment of fractures at the several clinical levels along the forearm bones is discussed it is appropriate to review anatomy. Then pathological physiology will be understood. The ulna makes up the most important part of the elbow. The radius makes up the most important part of the wrist. Therefore, in the adult, the head of the radius may be excised without seriously impairing the elbow and the head of the ulna may be removed without seriously weakening the wrist. As regards rotation, the ulna is the fixed member which allows rotation of the radius around it through an arc of 170 degrees. The two bones are fastened together by an interosseus membrane. Beginning on the ulnar side the fibers of the interosseus membrane run in a slightly upward direction. The muscles of greatest clinical importance are the triceps, the biceps, supinator longus, supinator brevis, pronator teres and pronator quadratus. The triceps brachii extends the flexed forearm on the arm by pulling on the olecranon. When the olecranon is broken there is a constant effort to separate the fragments (Figure 1). The biceps brachii, in addition to flexing the forearm on the arm, is a supinator. In a Monteggia injury its upward pulling action

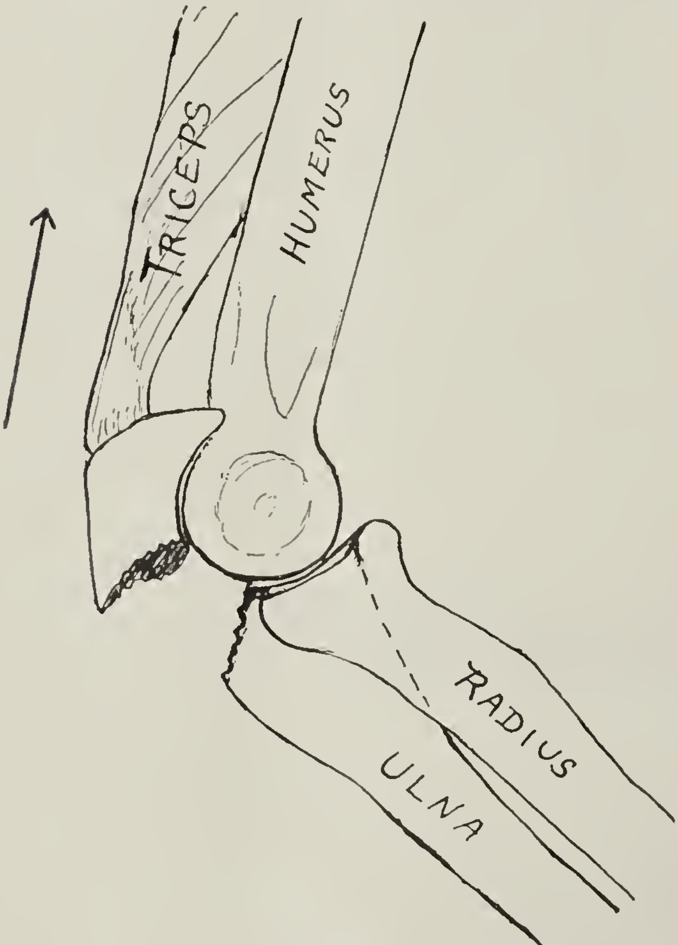
TRICEPS
HUMERUS
RADIUS
ULNA

Fig. 1—Illustration showing displacing pull of triceps brachii.

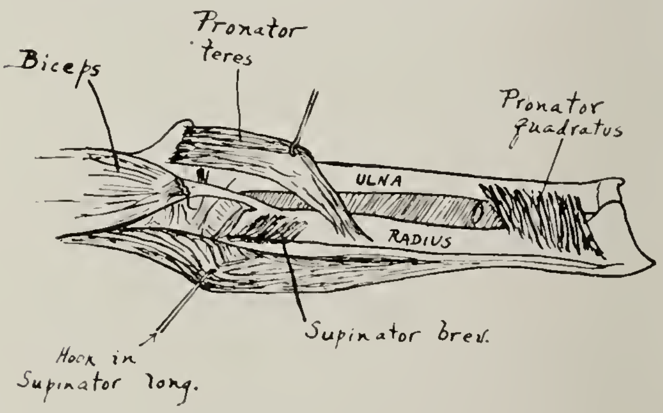
Biceps
Pronator teres
Pronator quadratus
ULNA
RADIUS
Supinator brev.
Hook in Supinator long.

Fig. 2—Muscles of forearm which cause angular displacement in fractures.

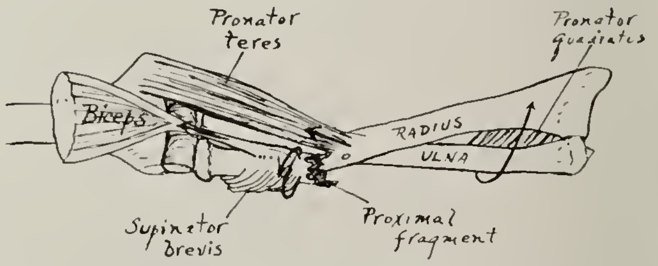
Pronator teres
Pronator quadratus
Biceps
RADIUS
ULNA
Supinator brevis
Proximal fragment

Fig. 3—Fracture between pronators and supinators. Proximal fragment supinated, distal fragment pronated.

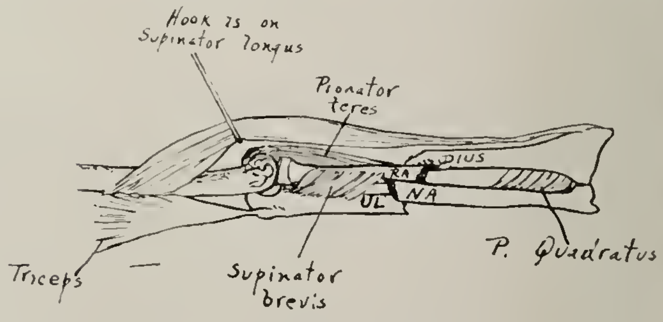
Hook is on Supinator longus
Pronator teres
RA
DIUS
UL
NA
P. Quadratus
Triceps
Supinator brevis

Fig. 4—Fracture of both bones between pronator teres and pronator quadratus.

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* Presented at the quarterly meeting of the Northeast Mississippi Medical Society, December, 1952, Tupelo, Miss.

in flexion holds the dislocated head of the radius out of place. The supinator longus begins above the elbow and inserts in the distal end of the radius. The supinator brevis originates from the ulna and inserts in the radius in the proximal third. The pronator teres begins above the elbow and inserts about the middle of the radius (Fig. 2). If the radius is broken just proximal to the insertion of the pronator teres, the short (proximal) fragment is externally rotated and the long (distal) fragment is internally rotated (Fig. 3). Then to complicate the situation the short fragment is displaced anteriorly by the flexor action of the biceps. The pronator quadratus is located in the distal third, its fibers passing almost transversely from the ulna to radius. Therefore since the normal pronator action of this muscle is made pathological by the fracture mentioned above, it pulls the broken piece of radius to the ulna thus narrowing the interosseus space and in its turn heaping complication upon complication. Figure 4 shows the pathological cross pull when the fracture level is between the pronator teres and the pronator quadratus. The above muscles are the most important clinically since the flexors and extensors of the hand and fingers produce shortening but no angulation.

FRACTURE OF THE OLECRANON

Due to the displacing pull of the triceps brachii all fractures of the olecranon process of the ulna with marked separation are operative cases (Fig. 5). These require firm internal fixation but yield uniformly good results.

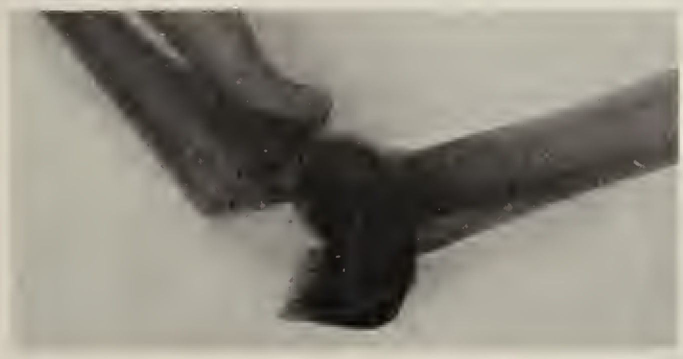


Fig. 5—X-ray of fracture of olecranon with wide separation.

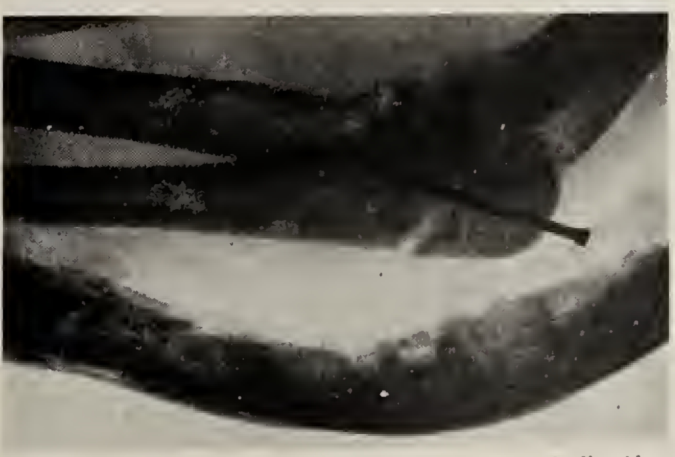


Fig. 6—Iron finishing nail used in internal fixation of fracture in previous illustration (Fig. 5).

Figure 6 shows the unorthodox carpenter's six penny iron finishing nail employed as the internal fixation. A general practitioner of Longview, Texas, demonstrated this method to me in 1932.

A Rush medullary pin makes even more secure internal fixation of a transverse fracture of the olecranon (Fig. 7). These injuries are splinted with the elbow at a right angle which allows shearing action by the triceps rather than a displacing pull. The separating action of the triceps does not come into play until there is union. If one elects to use the conventional wire loop the drill holes should be located so that the wire will be nearer the posterior cortex than the joint surface of the semilunar notch. This prevents gaping of the fracture at the cortex. A circular plaster-of-Paris splint is applied holding the elbow at an angle of 90 degrees.

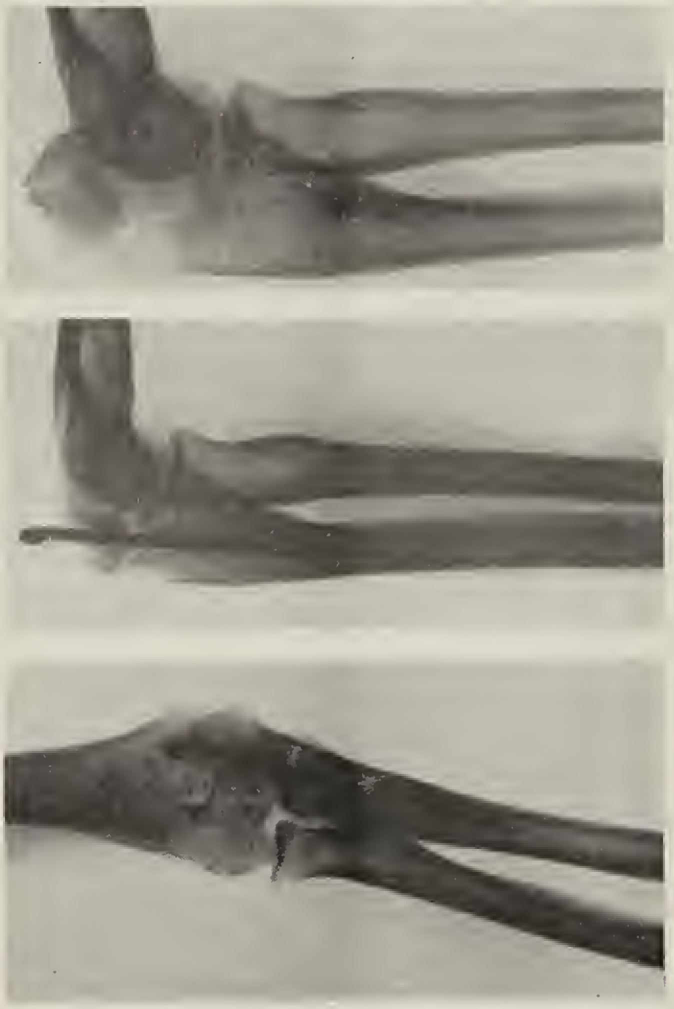


Fig. 7—Rush medullary pin employed in internal fixation of simple fracture of the olecranon.

Figure 8 demonstrates a fracture dislocation of the elbow in an adult. The injury is farther distalward than the usual one involving the olecranon. The ulna is broken at an oblique plane. The fracture line begins at the level of the

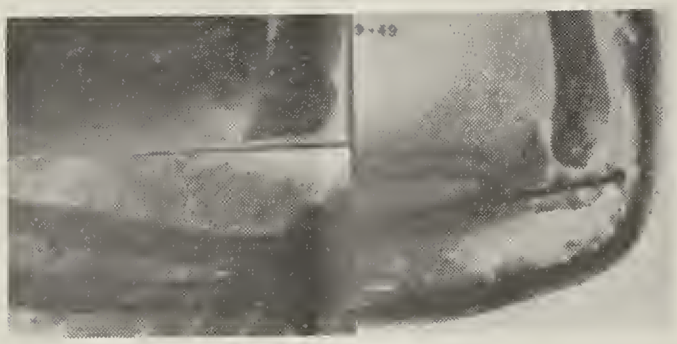


Fig. 8—Knowles pin used in internal fixation of compound fracture dislocation of the elbow.

coronoid process on the posterior cortex and extends into the semilunar notch. In this injury the annular ligament was not torn which kept the head of the radius in normal relationship with the ulna. The radius with the accompanying shaft (distal fragment) of the ulna was displaced forward as one part. The head of the radius was dislocated from the capitulum and the coronoid process of the ulna from the trochlea of the humerus. Reduction was easy under anesthesia but would not hold until the break in the ulna was made rigid. This was a compound wound side swiped against a road sign, the elbow projecting from a moving automobile. Medullary fixation was selected because of the minimum dissection required. A three and a half inch Knowles pin was used and good, though not perfect, reduction secured. Check-up radiographs eight weeks later showed perfect anatomical reduction. In spite of the débridement, soft tissue infection resulted which was controlled with penicillin. However, the principal aim was to avoid infection in the joint cavity, and the resulting ankylosis. Success in this regard was attained. There was union and three-fourths the normal range of motion when the pin was removed the ninth week.

MONTEGGIA FRACTURE

Traveling distalward toward the hand the next fractures adjacent to this level are those of Monteggia. The usual Monteggia injury results when the proximal third of the shaft of the ulna is broken by a thrust of force that also throws the head of the radius out of place. It requires open reduction with application of a metal plate on the ulna and repair of the annular ligament to hold the radius in place. A medullary pin in the ulna would also provide adequate internal fixation. In the less common flexion form of the injury, the dislocation of the head of the radius is backwards.

MONTEGGIA FRACTURE OF CHILDHOOD

Generally speaking childhood is a contraindication to open reduction. The exception that proves this rule occurs in the next illustration (Fig. 9).

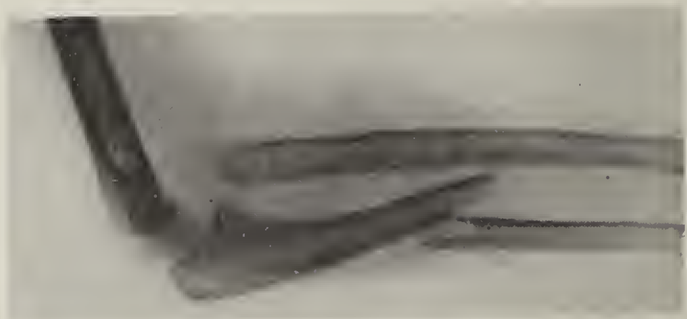


Fig. 9—Monteggia fracture of childhood.

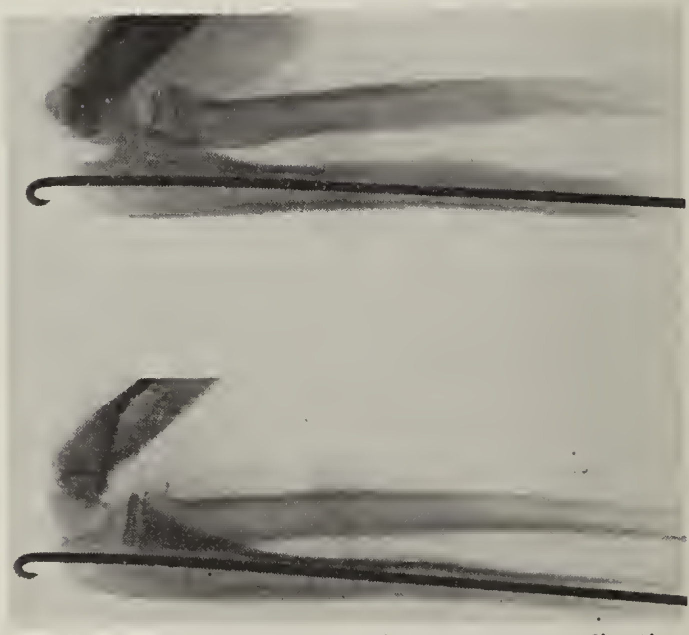


Fig. 10—Rush medullary pin in ulna secures fixation of fracture in previous illustration (Fig. 9).

This eight-year-old boy fell throwing his weight on the back of the forearm which struck the curb-like bank of a roadside ditch in front of his home. The shaft of the ulna was broken in the middle third and the upward thrust of force broke the neck of the radius. This allowed the biceps to displace the long distal fragment of the radius forward and angulate the ulnar fracture forward producing a dreadful deformity. Obviously the break in the radius could not be reduced and maintained without an accurate anatomical reduction of the ulna. This was executed with a Rush medullary pin (Fig. 10). Then the radius could be pushed easily into reduction by closed manipulation. Acute flexion with a Jones necklace held the reduction until there was no danger of displacing the fracture of the radius. The pin was removed after five weeks (Feb. 22, 1950). Note the abundance of callus at the ulna fracture sixteen weeks (May 13, 1950), after operation (Fig. 11). The neck of the radius has healed perfectly and there is complete function. X-ray examination 34 months after operation shows some radial bowing of the ulna. The fusiform swelling that formed on the ulna early after union is disappearing and the bone is returning to normal (Fig. 12). Photographs reveal full flexion and extension (Fig. 13). There is also full range of rotation.

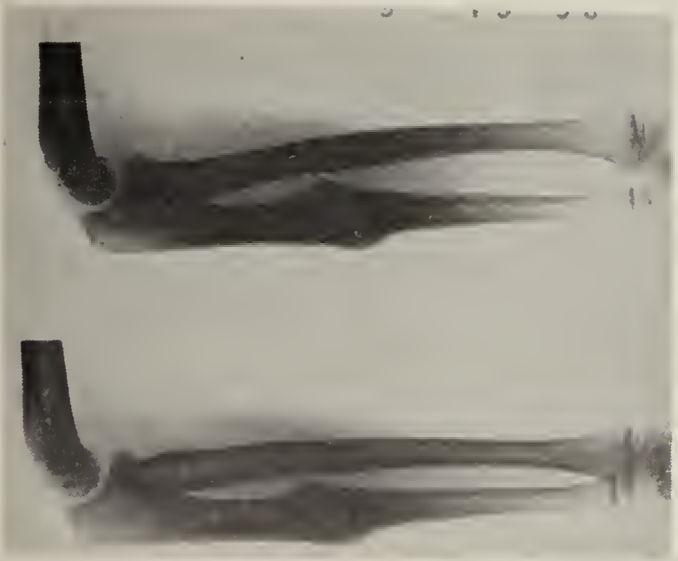


Fig. 11—X-ray illustration of callus formation of ulna and good reduction of proximal radial ephiphysis sixteen weeks after injury.

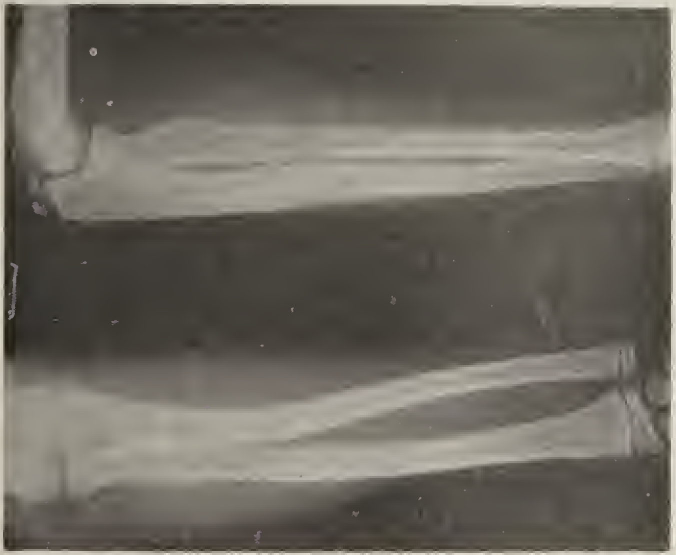


Fig. 12—X-ray appearance thirty-four months after injury.

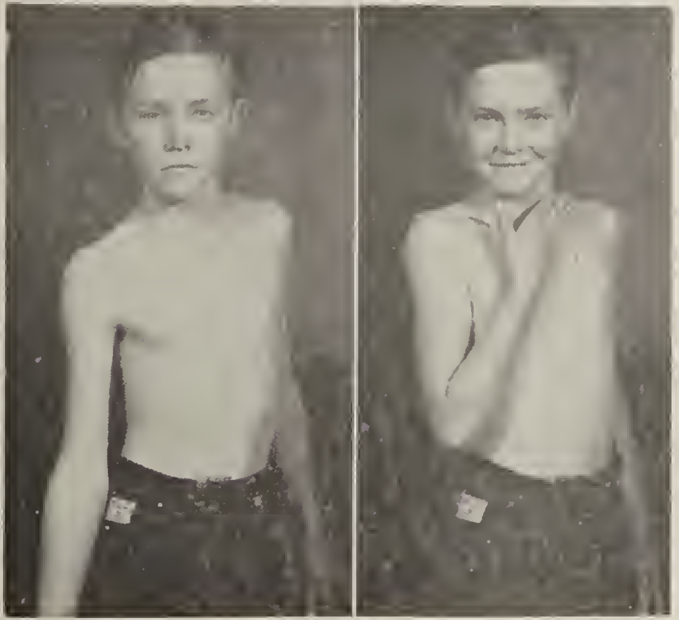


Fig. 13—Photographs demonstrating extension and full flexion of elbow thirty-four months after injury.

FRACTURE OF THE SHAFTS OF BOTH RADIUS AND ULNA

I once asked one of the master bone surgeons of America the treatment of choice for fracture of both bones of the forearm. To my astonishment he replied, "I haven't yet decided what is the best treatment". The more experience I gain the more wisdom I find in this apparently baffling statement. The treachery of this type of case is illustrated in Figure 14, a 32-year-old woman. A satisfactory end-to-end reduction was obtained at closed manipulation. It slipped and the bones overlapped as revealed by x-ray examination two weeks later (Fig. 15). However, the attending doctor was "on the ball" and found the unsatisfactory position on x-ray and referred the patient for operation. Open reduction was carried out and Venable type stainless steel plates applied. This produced union as revealed by the check-up a year later (Fig. 16). Now she has a full range

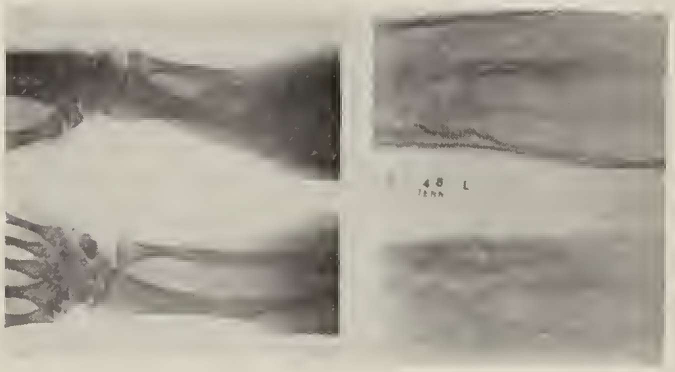


Fig. 14—Fracture of both bones of forearm before and after closed reduction.

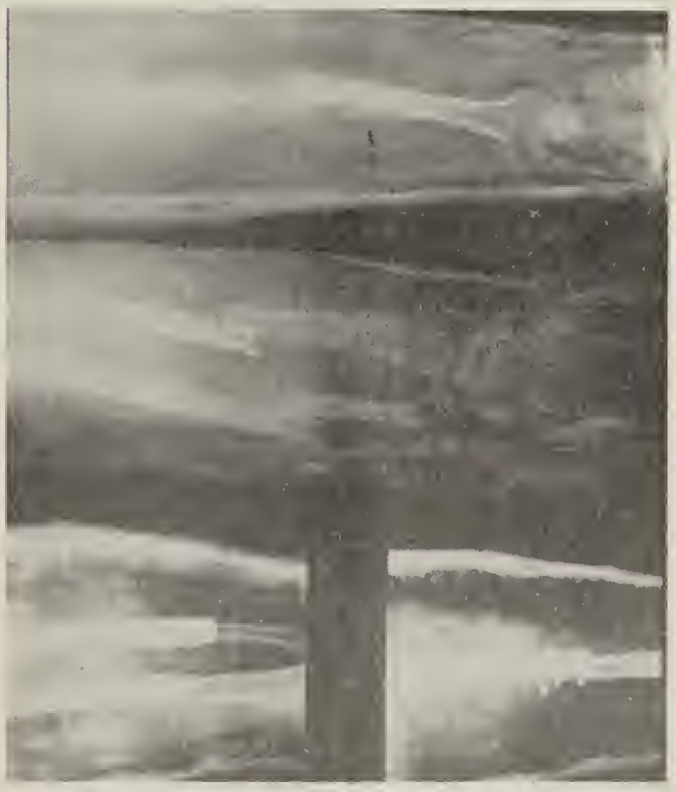


Fig. 15—Lost reduction. X-ray appearance after application of venable type plates.

of motion in all directions and can do any type of work to which she was formerly accustomed.

The next case is somewhat similar, a white female age 47 with fracture of both forearm bones in the middle third (Fig. 17). Closed reduction was executed with the understanding that radiographs would be made weekly for the first three weeks. Note the excellent reduction at first. Three weeks later look at the way the proximal end of the distal radial fragment has crawled over nearly touching the ulna. This makes one fear synostosis which would block all rotation. Successful internal fixation was provided by a Rush medullary nail in the radius (Fig. 18). The next illustration shows the progress one month after operation (Fig. 19). Twelve weeks later there were x-ray signs of union-striations arching across the fracture line (Fig. 20).

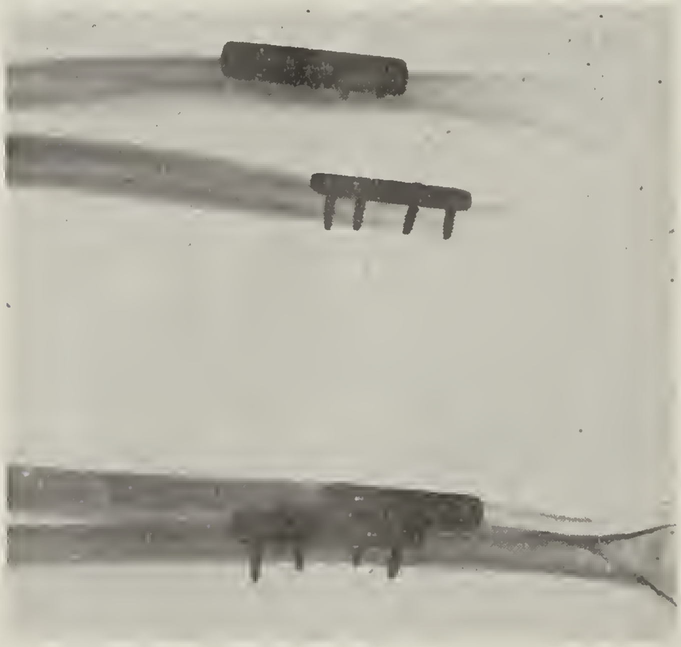


Fig. 16—X-ray check-up of same case one year after operation.

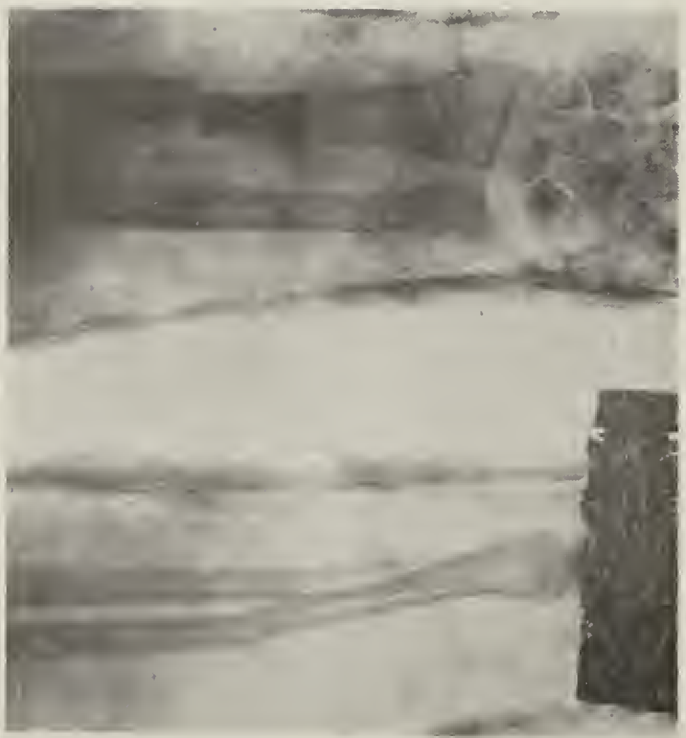


Fig. 17 a)—Excellent position after closed reduction of fracture of both bones of the forearm.

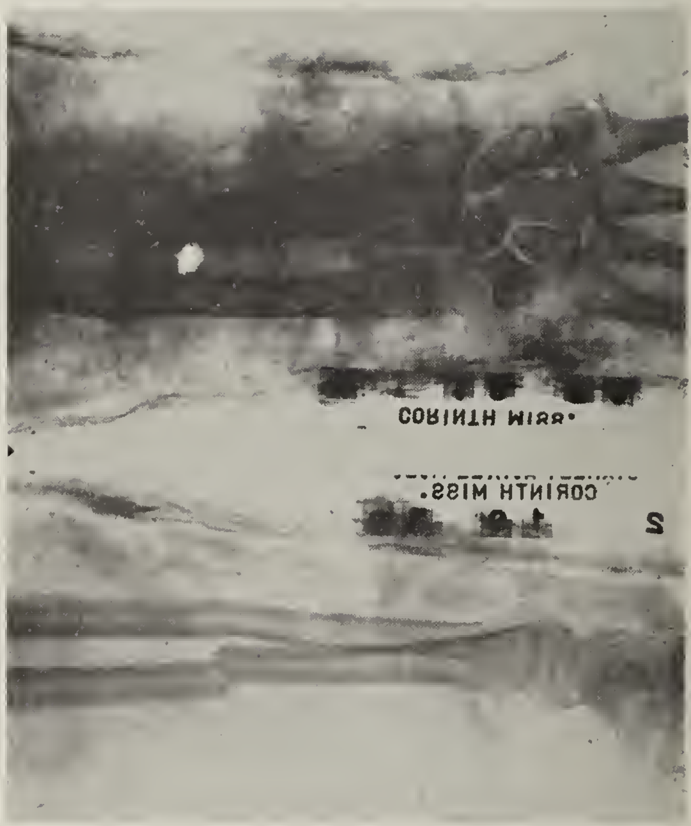


Fig. 17 b)—Poor position three weeks later.

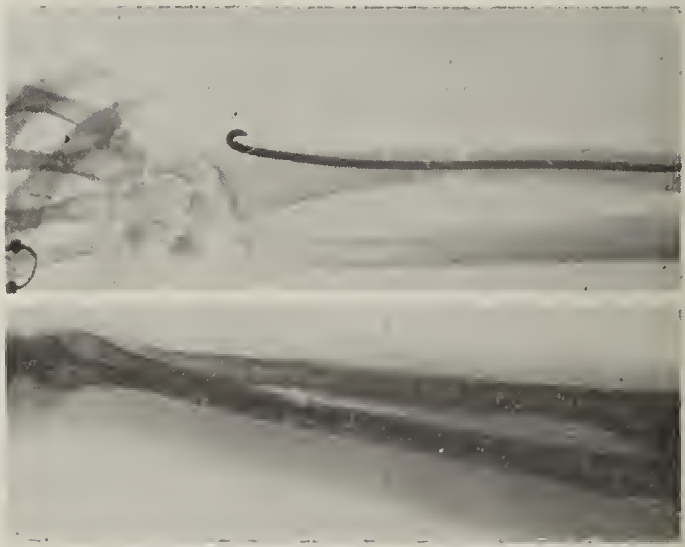


Fig. 18—Operative reduction with Rush medullary pin in radius.

The next case, that of a 14-year-old school boy, shows marked angulation at the fracture level in the middle third (Fig. 21). It was selected to demonstrate that good results can be obtained in a young patient even if the reduction is not anatomically correct. Treatment consisted of closed reduction under general anesthesia and application of a circular plaster-of-Paris splint. Note that the pronator teres had pulled the proximal radial fragment ulnarward until there is just barely an end to end approximation as demonstrated by the

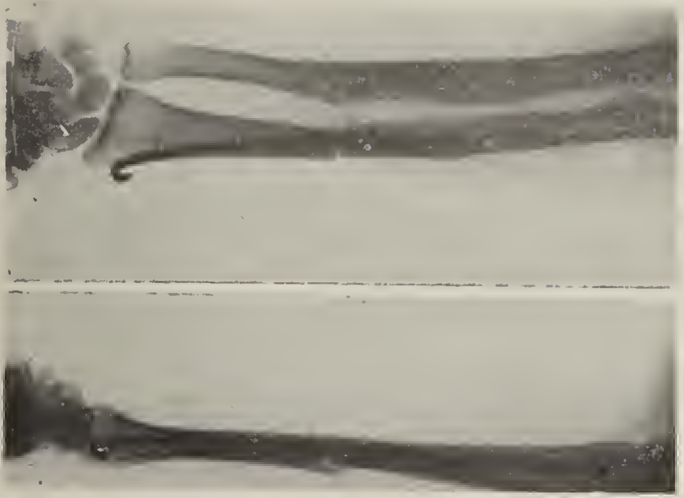


Fig. 19—Same case (Fig. 18) one month after operation.

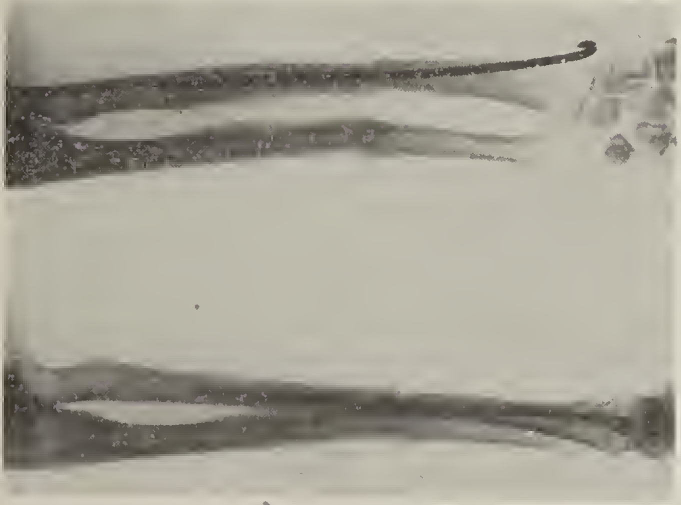


Fig. 20—Twelve weeks later with x-ray evidence of union.

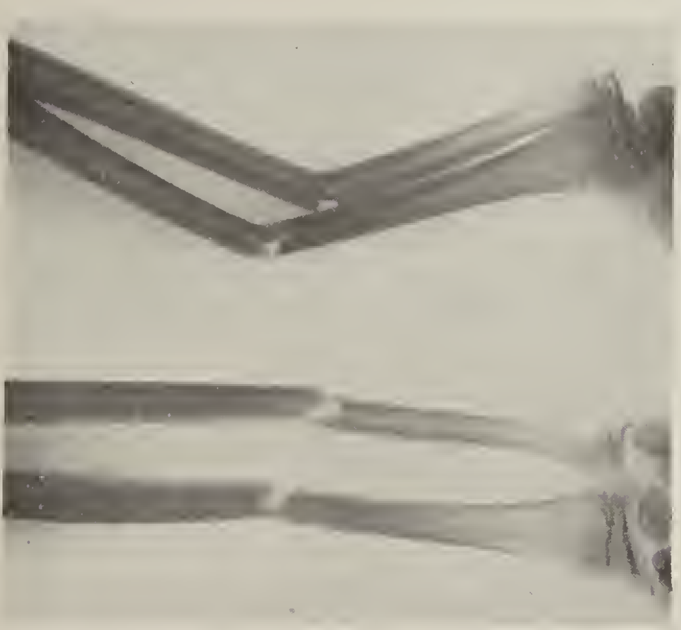


Fig. 21—Marked angulation of fracture of forearm bones in boy, age 14.

check-up radiographs three weeks after reduction (Fig. 22). There is good callus formation and the boy obtained a clinically good arm.

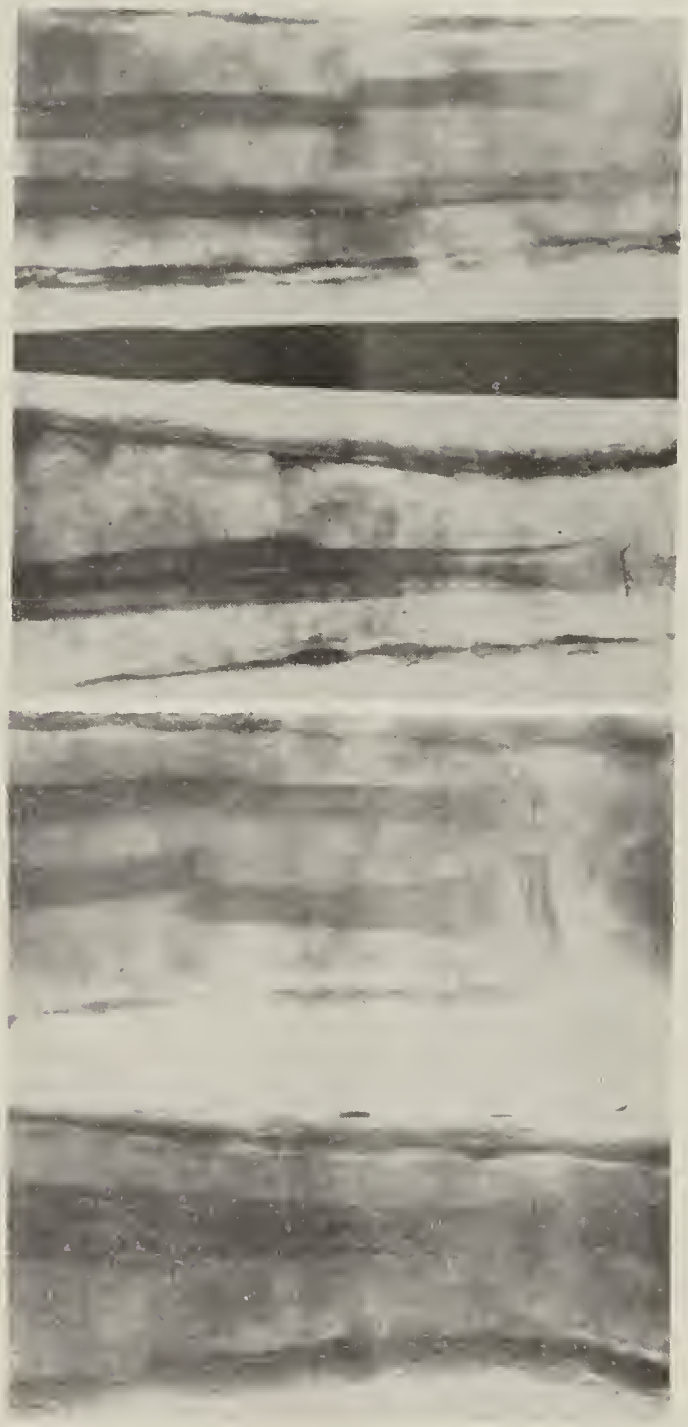


Fig. 22—Closed reduction, not anatomically perfect, of above case. Note that x-ray appearance was still poor three weeks later. However, the boy obtained a clinically good forearm.

MAL-UNION

The problem of correcting a mal-union is presented next (Fig. 23). This one is considered of good teaching value because of the problems that followed the corrective treatment. The fracture involves both bones at the junction of the middle with the distal thirds. The error in the original treatment elsewhere was that the splint did not go above the elbow. *In all fractures of the forearm above the Colles' level the splint must extend well on the arm and hold the elbow in flexion.* This prevents rotation of the forearm which, if not blocked, will often break down

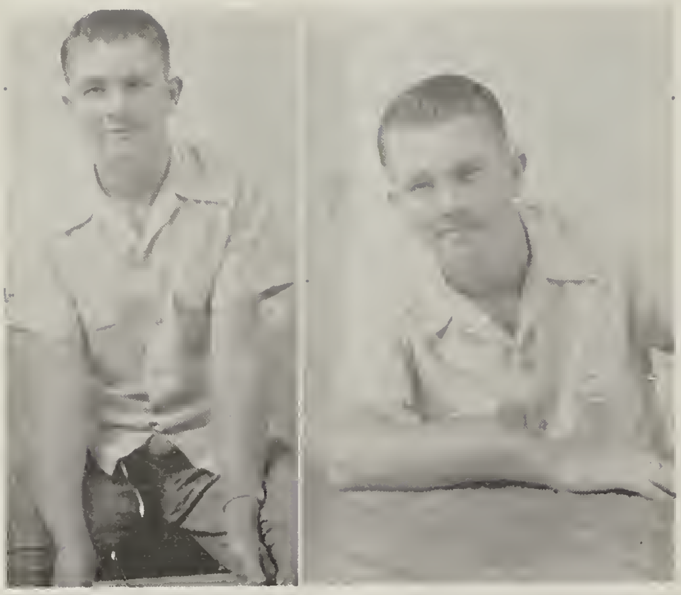


Fig. 23—Mal-union of broken forearm.

a satisfactory reduction. The corrective operation consisted of osteotomy, followed by applying a four-hole metal plate to the radius and suturing the ulna with chromic catgut (Fig. 24). A secure circular plaster-of-Paris splint was applied. The progress was apparently good until two months after operation, when the distal fragments of both bones were found displaced in ulnar deviation. He had been picking cotton without my knowing it. Three months is the earliest period union should have been expected in this type of case. Prior to a two-month period, union could not have been firm. Investigation revealed, however, that one of the middle screws went in the fracture line allowing the distal fragment of the radius to pivot on the end screw. The suture through the drill holes in the ulna would also allow hinge action. The deviation was corrected by cutting the cast on the ulnar side, leaving a "hinge" of plaster on the radial side and wedging the parts into alignment (Fig. 25). This brought the radial fragments back to the good position they occupied after the corrective operation. Eventually the radius united in good functional position (Fig. 26). The proximal end of the distal fragment of the ulna was angulated toward the radius, but the position was satisfactory for a good functional result. Although delayed, union of the ulna followed and the patient is now in the air force.

Sometimes a good reduction will go to pot when the treatment seems adequate. A ten-year-old boy broke his left forearm in the distal third when he jumped from a bank and fell (Fig. 27). Satisfactory reduction demonstrated by x-ray was secured and an adequate circular plaster-of-Paris splint was applied, extending to mid-arm and holding the elbow in flexion. When the cast was removed a month later the distal radial fragment was turned backward with forward bowing at the level of the fracture (Fig. 28). Since the deformity was so marked, it was corrected by operation—osteotomy and plating.

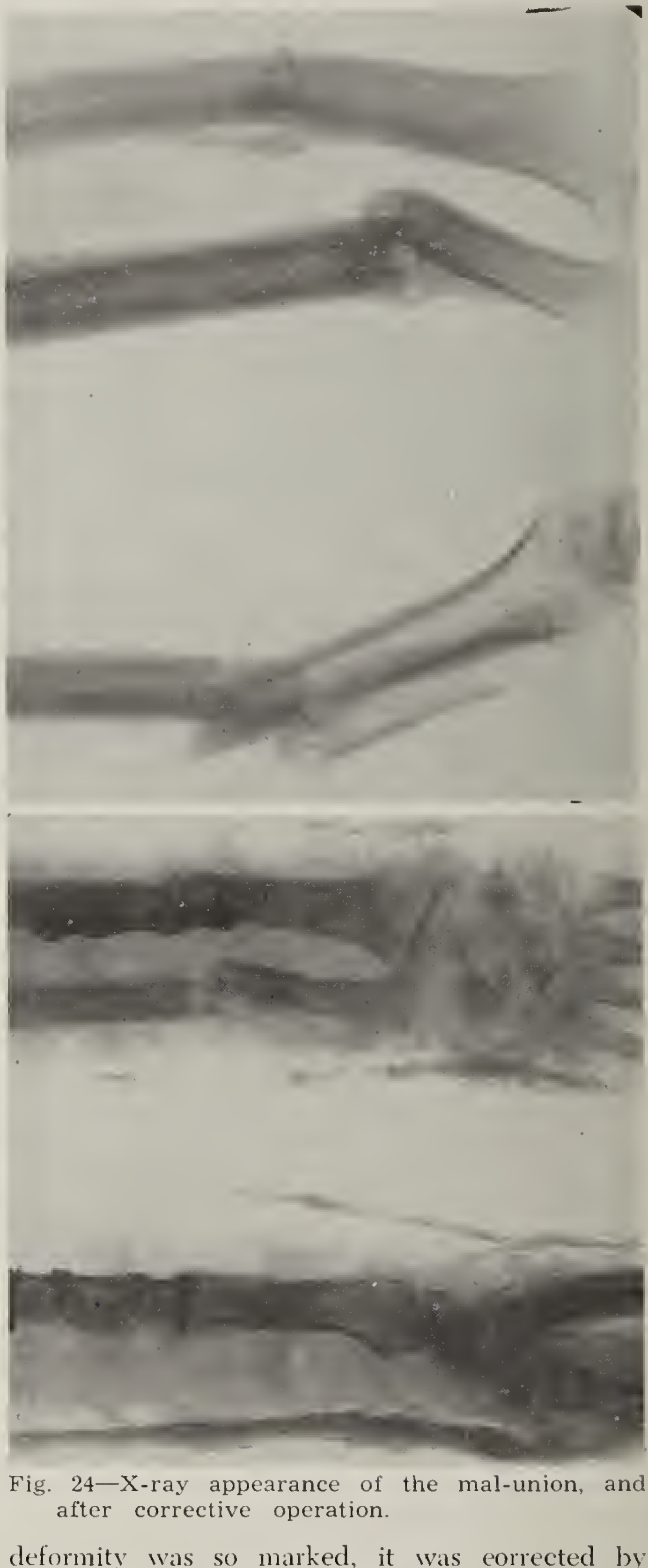


Fig. 24—X-ray appearance of the mal-union, and after corrective operation.

PERMISSIBLE AMOUNT OF DEFORMITY

Onne and Sandblom studied the late results of 126 fractures in children between the ages of one and thirteen years. They found that during the first decade of life there is usually complete correction of angulation up to 20 or even 25 degrees. Above this age or this degree of malposition the power of correction is decreased, or

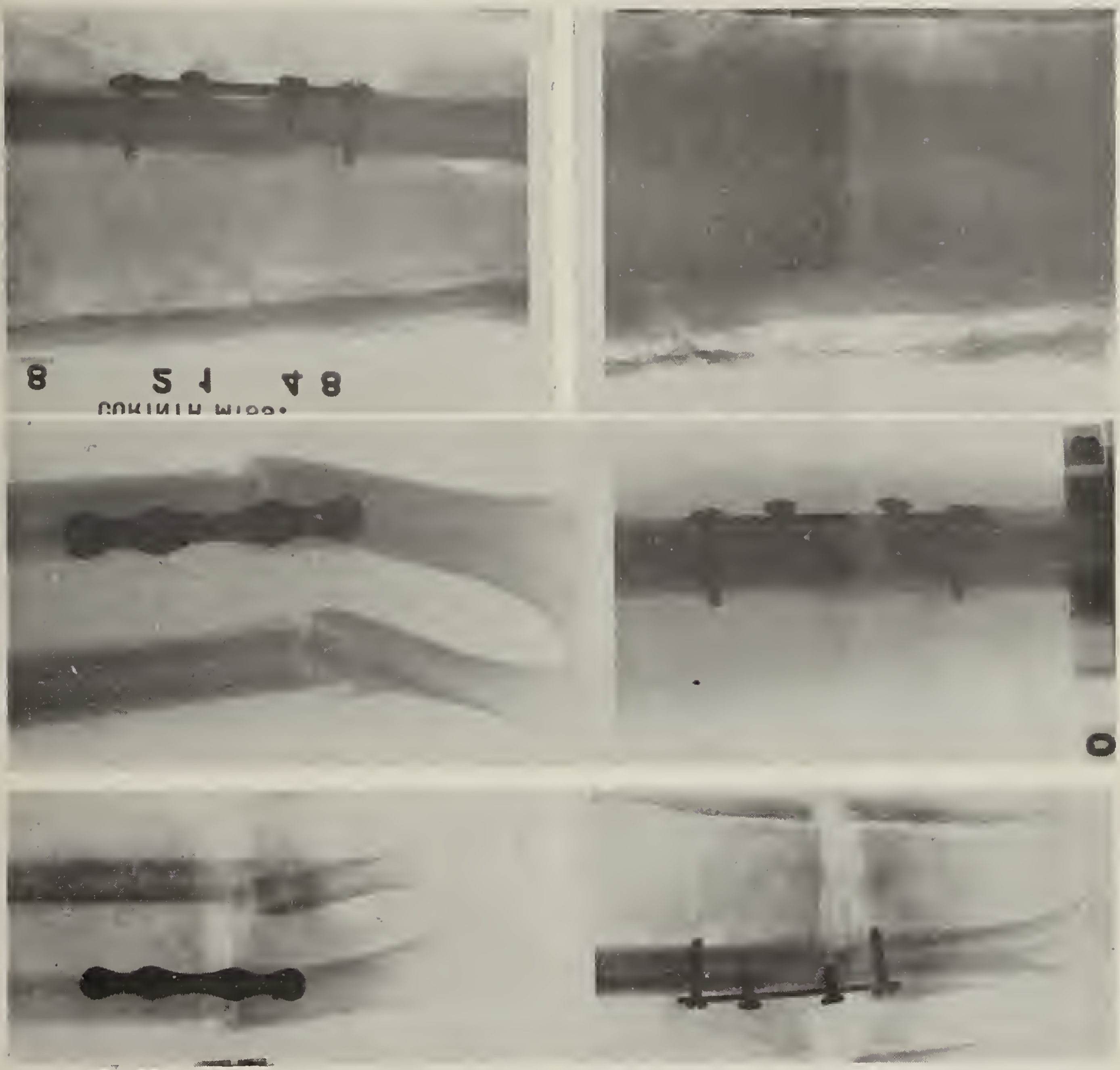


Fig. 25—Progress of the above case. a) Satisfactory position shortly after operation. b) Two months after operation after picking cotton with this hand. c) Bone fragments positioned after corrective wedging of cast.

is not capable of preventing residual detriment, respectively.

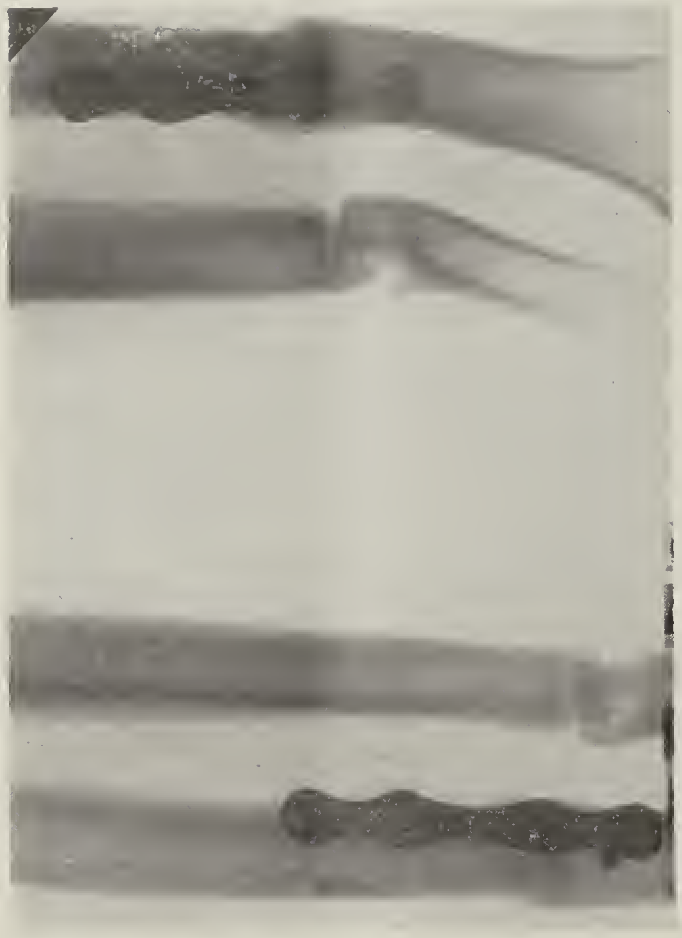
FRACTURE OF THE DISTAL END OF THE FOREARM

A Colles' fracture may not be a trifling matter. This 52-year-old carpenter sustained this comminuted fracture in the same injury with a compression fracture of the first lumbar vetebra (Fig. 29). A scaffold broke, allowing him to fall 20 feet onto a concrete floor. Since it was decided that a poor result would follow any type of treatment, neither open reduction nor skeletal traction was elected (Fig. 30). The end result was 35 per cent loss of use of the extremity and workmen's compensation insurance paid him accordingly.

Fracture of the ulna at the junction of the middle and distal thirds is an operative case from the outset, because the transverse pull of the pronator quadratus will defeat any attempt at conservative treatment (Fig. 31). This fracture requires open reduction and adequate internal fixation.

Fracture of the ulnar styloid usually heals without disability (Fig. 32). If non-union with persistent soreness results, excision is indicated.

It was meant here that this is the only fracture. When the fracture of the ulnar styloid is part of a Colles' fracture the radial fragments must be properly reduced to relax the pathological pull on the triangular ligament allowing the styloid to return to reduction.



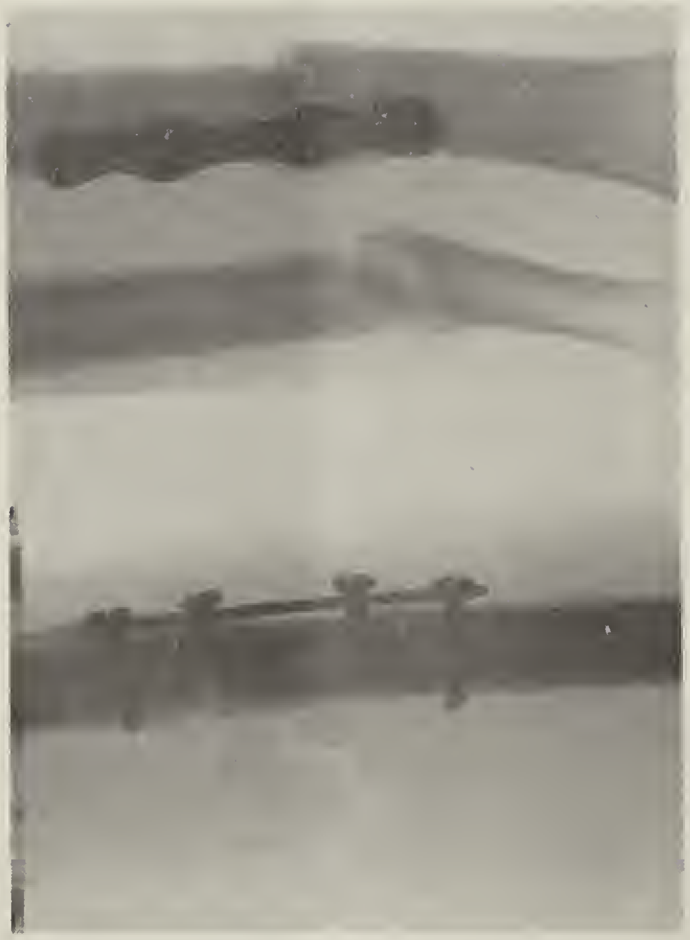


Fig. 26—Union of radius, delayed union of ulna in above case.

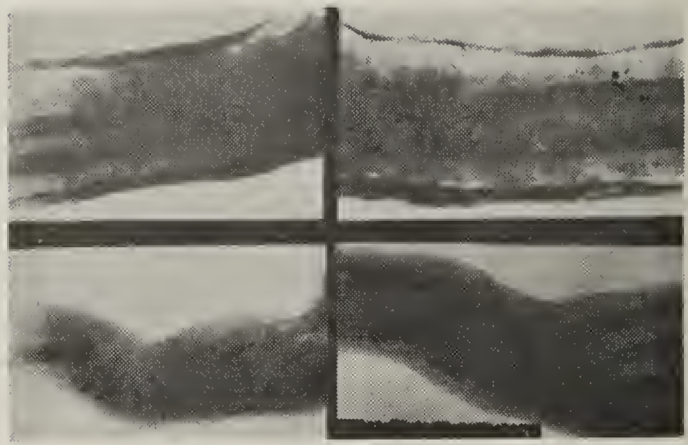


Fig. 27—Silver fork deformity of fracture of distal third of forearm in boy, age 10, with satisfactory closed reduction.

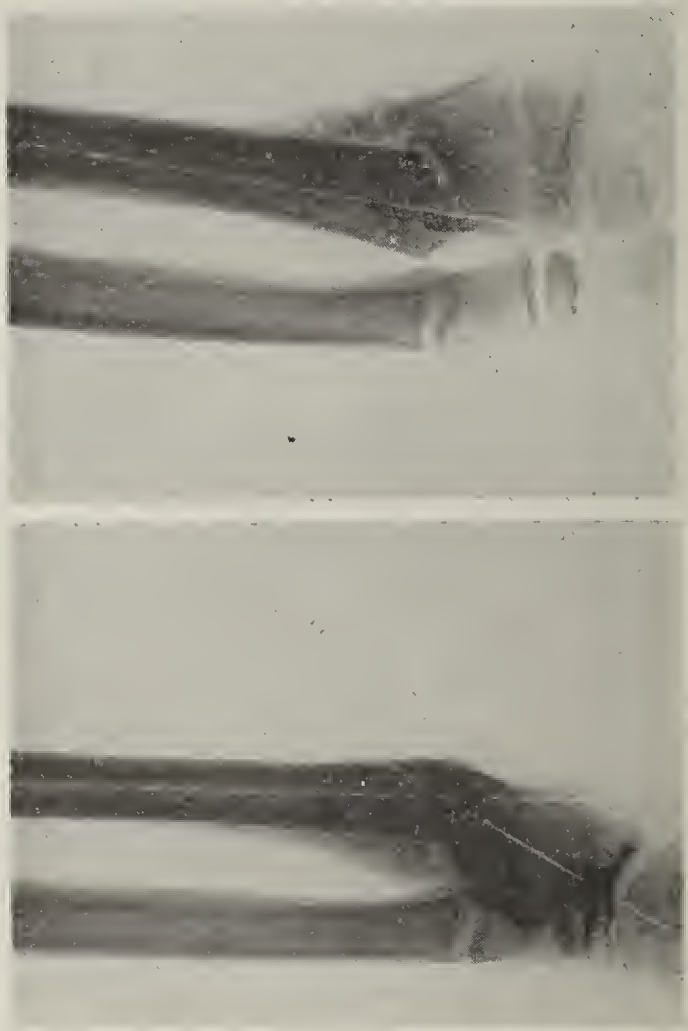


Fig. 28 a)—Posterior and radial angulation of the distal fragment three weeks later. Same case as

Fracture of the radial styloid that extends into the joint has a tendency to displacement after reduction because of the pull of the supinator longus. It may be held by a circular plaster-of-Paris splint with the wrist in extreme flexion and ulnar deviation. Should check-up x-ray examination reveal loss of reduction, open reduction with firm metal internal fixation should be employed.

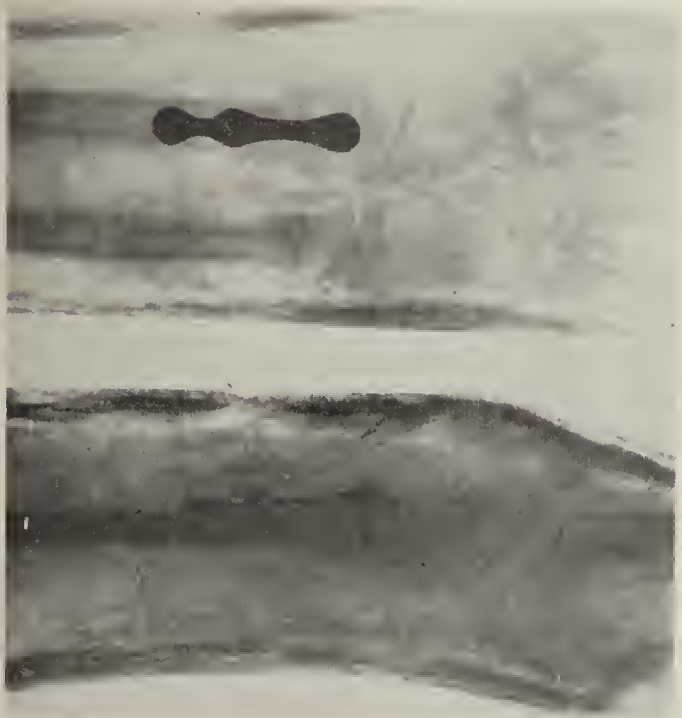


Fig. 28 b)—Corrected position after osteotomy and plating.

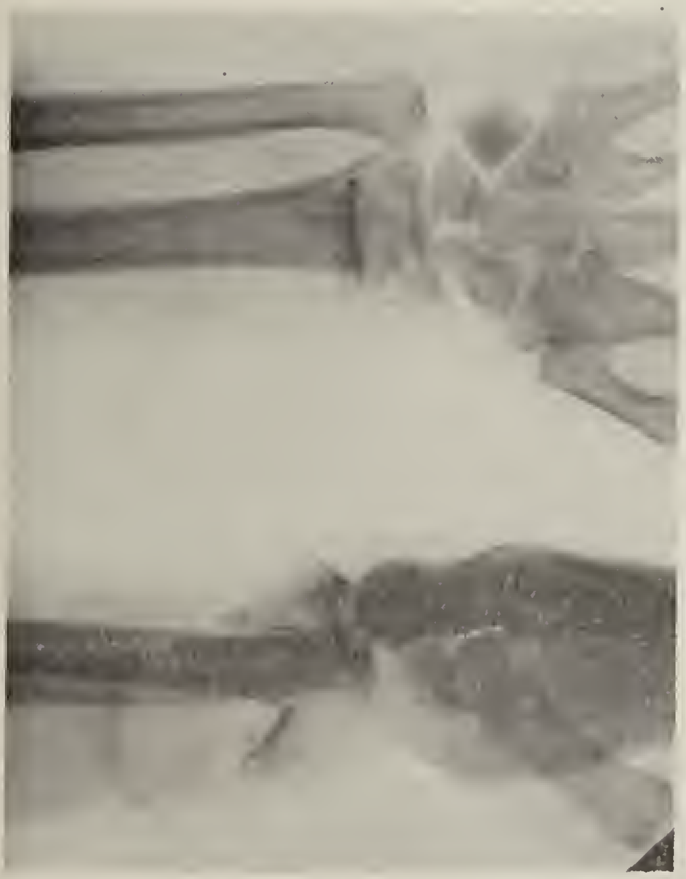


Fig. 29—Comminuted Colles' fracture with neither traction nor open reduction indicated.

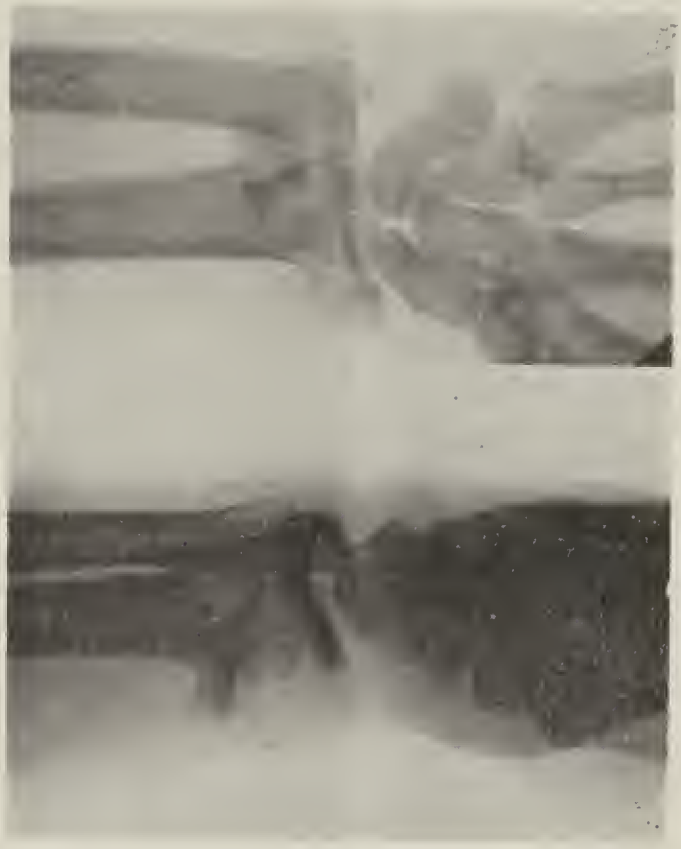


Fig. 30 a)—Three months after injury.

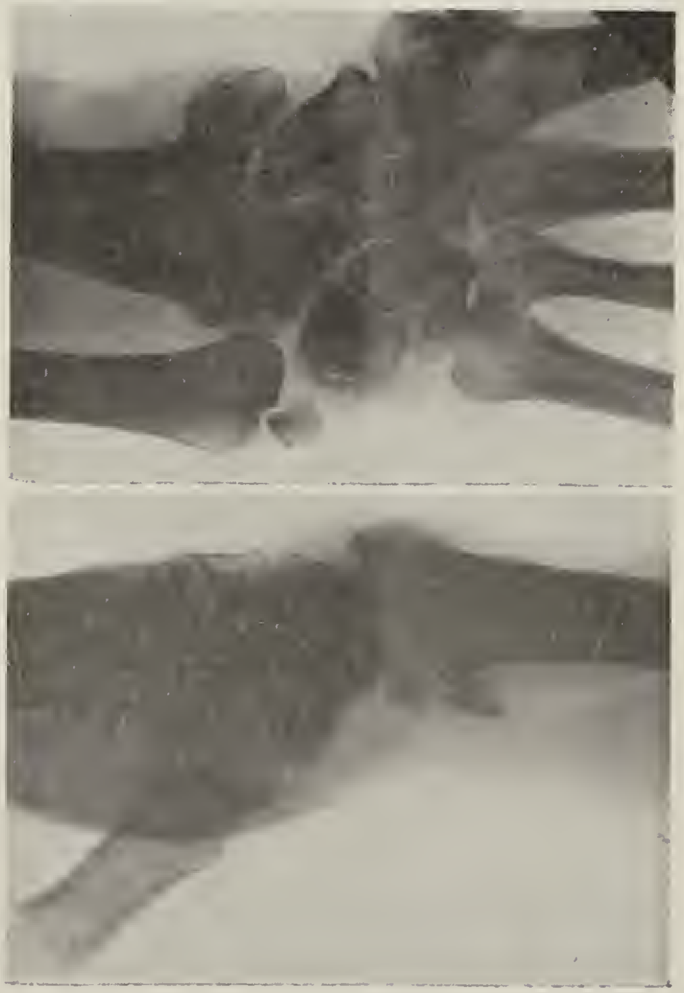


Fig. 30 b)—Ten months after injury. End result: 35 per cent loss of use of the extremity, with compensation payment accordingly.

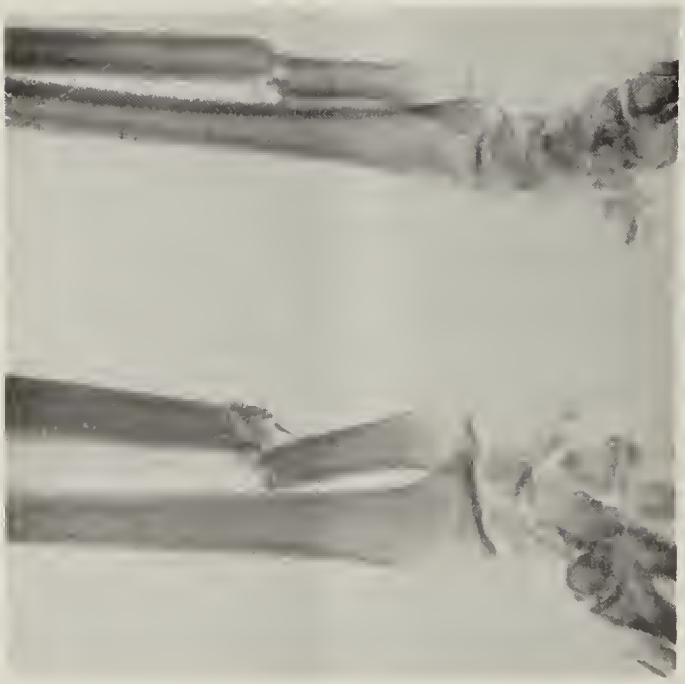


Fig. 31 a)—Fracture of the ulna at junction of distal and middle thirds demonstrating the displacing pull of the pronator quadratus muscle.

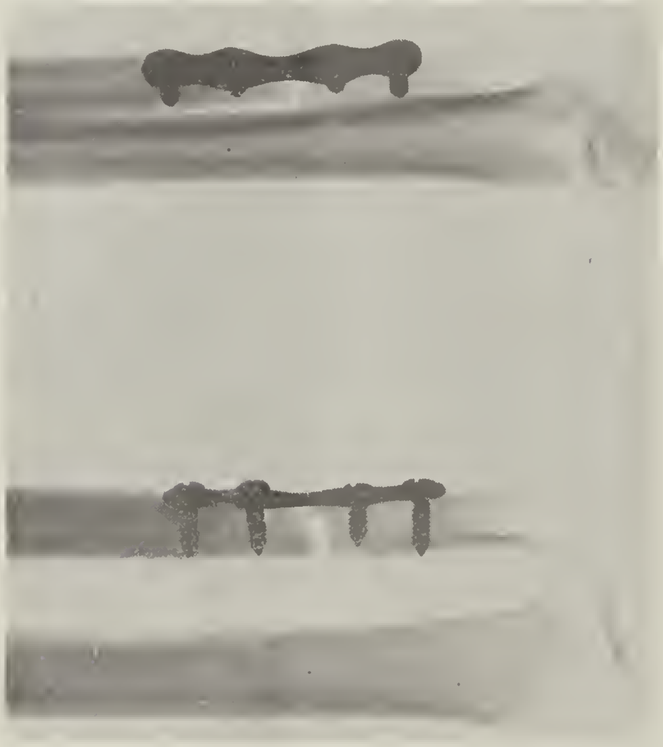


Fig. 31 b)—Good anatomical position restored by metal plating.

In treating fractures near the wrist it is well to remember that the radial styloid normally extends about three fourths of an inch distal to the head of the ulna. The joint surface of the radius articulates with the carpus and faces somewhat anteriorly. Shortening of either radius or ulna may alter the radio-ulnar articulation and hence may limit rotation. Therefore reduction must correct all these changes in the normal anatomy when they occur. The cancellous bone at the distal end of the radius favors impaction. When this results it must be broken up as the initial step in reduction. Impaction often complicates wrist fractures in the elderly.

The writer looks with disfavor on local anesthesia. The complete relaxation of surgical general anesthesia will allow a satisfactory reduction where failure might result from lack of cooperation. The patient unwittingly may pull against the surgeon and prevent good reduction.

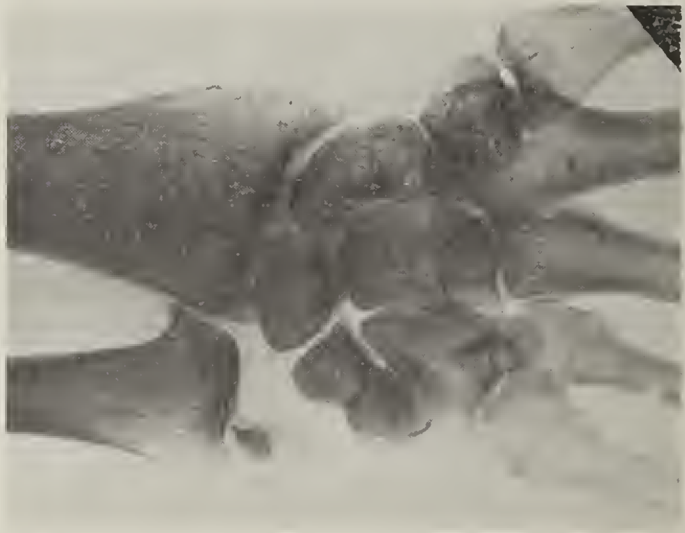


Fig. 32—Fracture of the ulnar styloid.

SUMMARY

1. Knowledge of the altered muscle pull indicates the proper treatment.
2. Fracture of both bones of the forearm in adults is usually an indication for open reduction.
3. Fractures of the forearm in children can be adequately handled by closed reduction. The exceptions are those near the elbow.
4. In all forearm fractures above the level of Colles', the splint must extend on the arm and hold the elbow in flexion.

————§————

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DISCUSSION

Dr. John Dyer (Houston) — It has been a real pleasure listening to this splendid discussion of fractures of the forearm. Many of these fractures do offer real problems. It is difficult to reduce them and it is also difficult to maintain reduction. Add to this the high rate of non-union which occurs in the upper third of the forearm, and we can see what real problems these fractures present.

Fractures of the forearm should be reduced early. If reduced in time a simple closed reduction may be done in many cases which would have been impossible if done a few hours later. Many such cases end up as complicated open reductions simply because they were not reduced before swelling took place. We must all admit that a good closed reduction is better than a good open reduction.

Dr. Hill's emphasis of adequate fixation by extending the cast above the elbow is a point well taken. Failure to do this frequently causes the loss of good reduction.

Dr. R. E. Shands (New Albany)—I shall deal only with one of the most frequent and most troublesome fractures of the forearm — namely that of both bones where reduction is difficult and maintaining a position problematic. Some of our old methods are best reviewed and I wish to show again the use of the Chinese traction apparatus* by which the forearm is suspended by the fingers and traction is obtained by adding water to a bucket suspended from the arm by a sling. Enough water is added to obtain reduction. The bone ends are manipulated together and the cast is applied while this position is held. Rarely does the position change. It is possible also to use several turns about the wrist instead of the webbed finger traction of this apparatus, altho the cast is not as easily applied. In the case of oblique fractures where maintenance in reduction is more difficult or even impossible this apparatus allows pins or Kirschner wire to be drilled across and incorporated in the cast. By this simple mechanical device, I have avoided open reductions many times.

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* Siebrant and Co.
St. Louis

Presenting in the pages that follow:

BOOK SECTION

INSTALLMENT 9

Atlas of Rush Pin Technics

LESLIE V. RUSH, M.D.
Department of Surgery, Rush Memorial Hospital, Meridian, Miss.

This is the ninth of a series of monthly installments to be published in *The Mississippi Doctor* during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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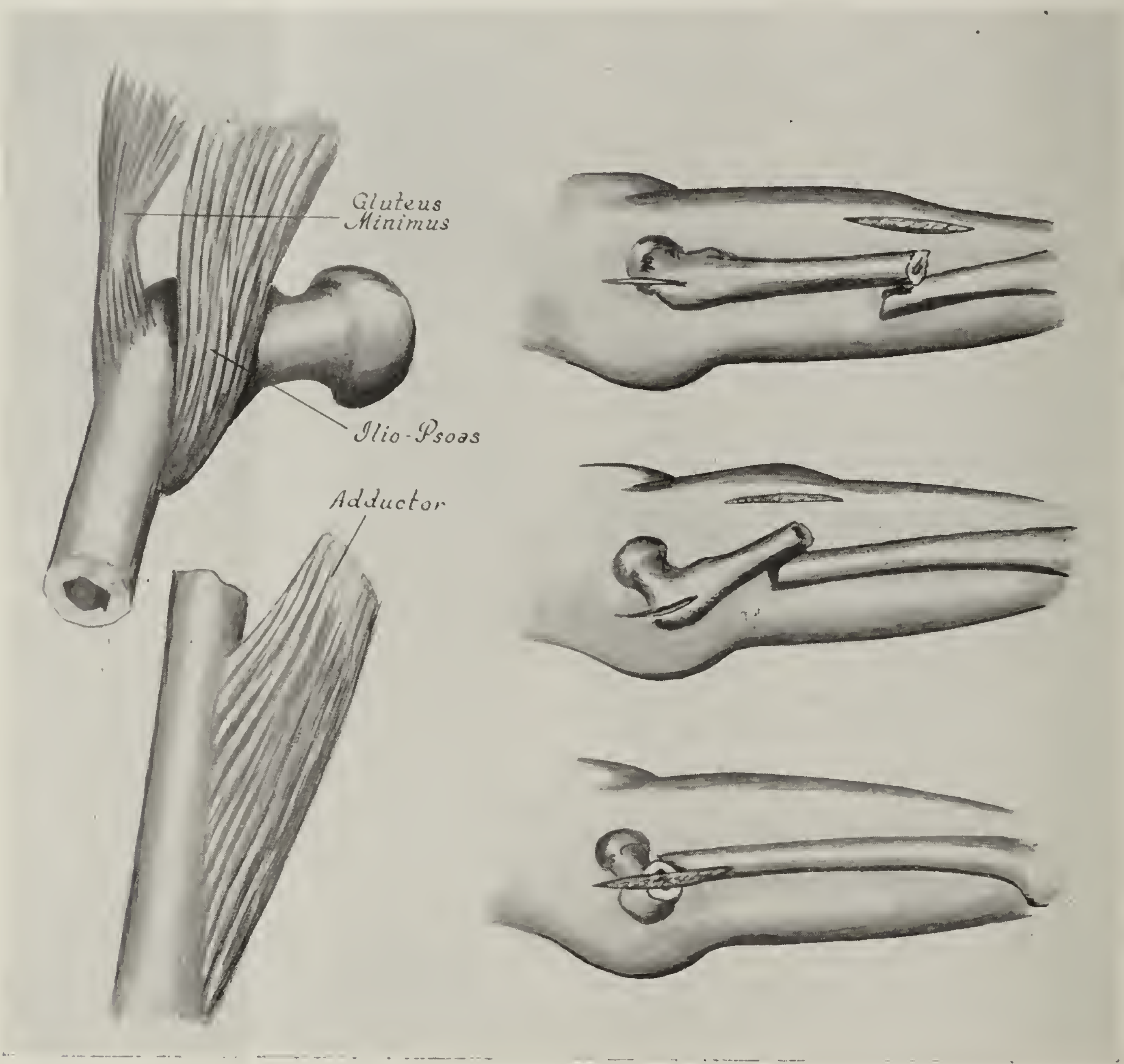


Upper Third

DISPLACEMENT

The upper fragment becomes the problem. It has been shown that the shorter the fragment, the less stable becomes the fixation. Here, also, the shorter the fragment, the greater the displacement.

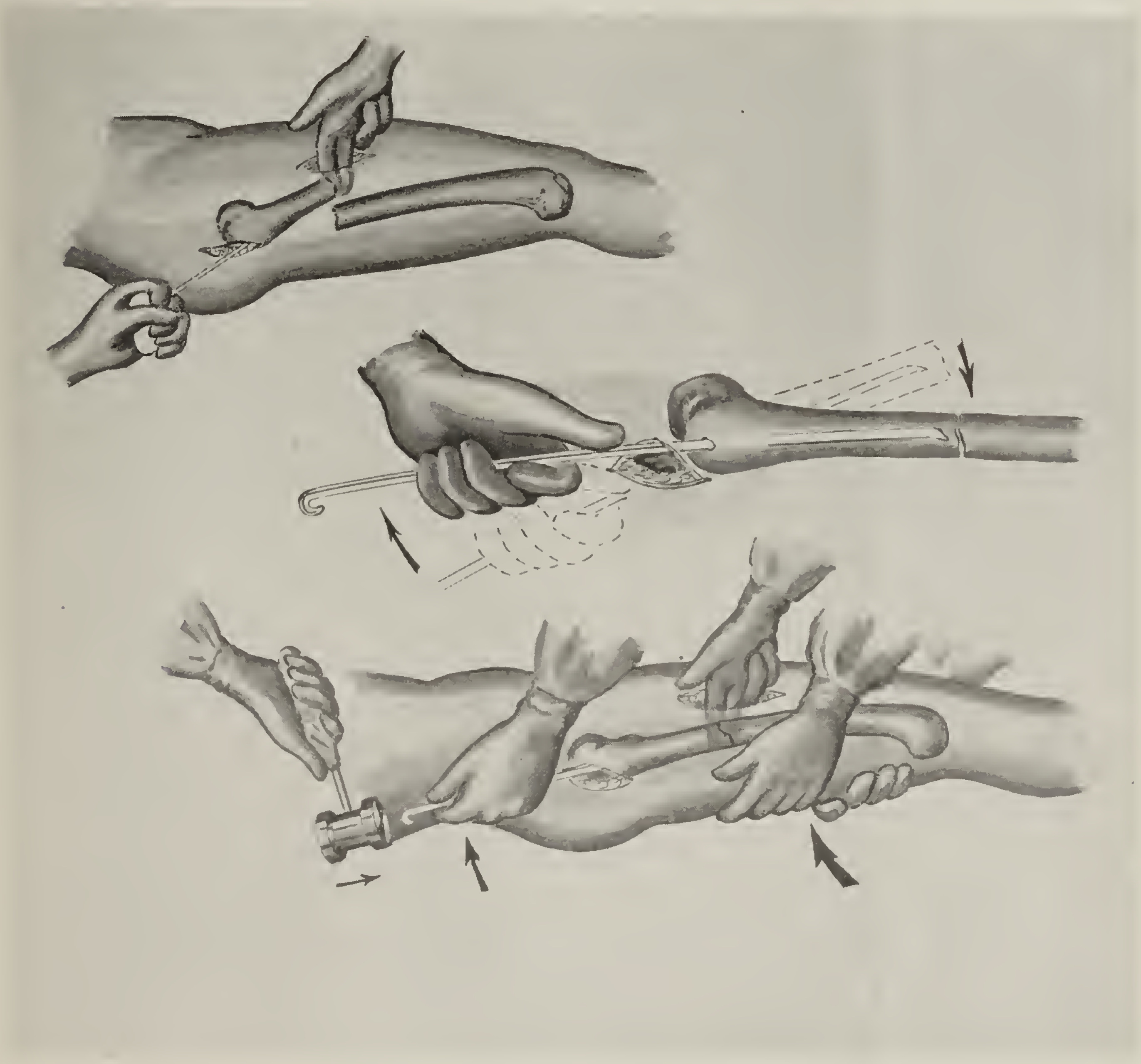
The upper fragment is flexed by the iliopsoas, and abducted and externally rotated by the rotators of the hip. The higher the fracture, the more effectively this muscle action is exerted upon the bone so that great deformity can occur at the subtrochanteric area. There is marked tendency to anterolateral angulation.

COMPARATIVE DISPLACEMENTS

MID-SHAFT: Little displacement proximal fragment. Great trochanter remains lateral and is easy to enter with pin.

UPPER THIRD: Great trochanter more posterior, shaft flexed and abducted. Incision must be more posterior, and the direction of awl reamer must be adjusted to axial line of upper shaft.

SUBTROCHANTERIC REGION: Fragment still more violently displaced and is difficult to manipulate. Opening for pin is best made using awl reamer or drill in retrograde fashion.



Technic: Junction Upper and Middle Thirds

The procedure here is the same as that of the mid-shaft except that the proximal fragment is more cantankerous.

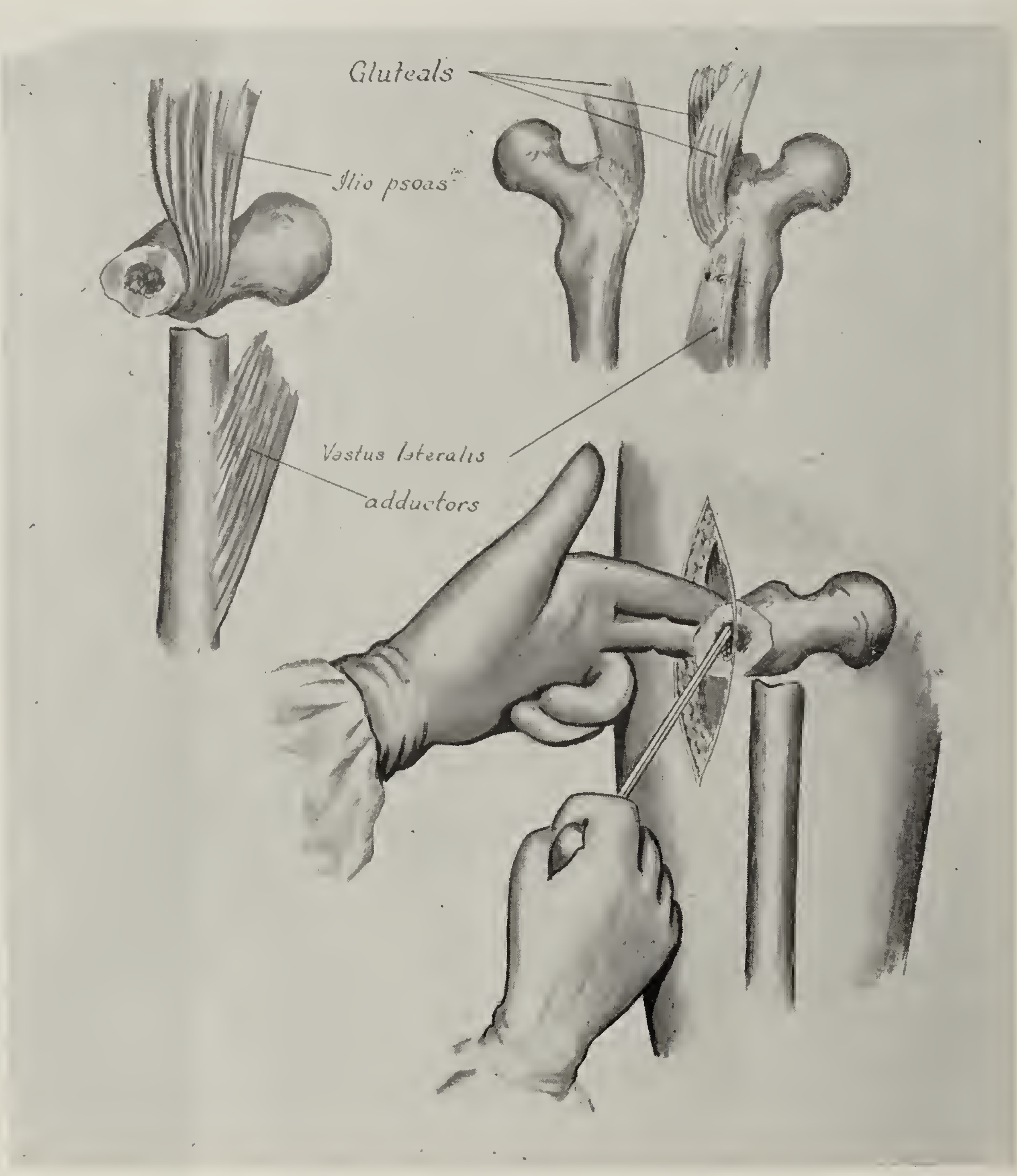
The incision over the trochanter must be placed more posteriorly. Since the proximal shaft is in partial flexion, the direction of the awl reamer must be altered to a more obliquely anterior one to conform.

When the pin has been driven to the fracture line, it can be manipulated to move the proximal fragment into position. The palpating fingers in the primary wound guide the procedure, and an assistant makes upward traction to lift the lower fragment.

The surgeon here has two fingers of the right hand in the primary incision to align the bones. The left hand is maneuvering the proximal fragment by the pin.

One assistant is lifting up on distal fragment as second assistant taps pin with the mallet.

The pin used here is curved as before, and the operation is completed as in the mid-shaft.



Femur: Subtrochanteric Fracture

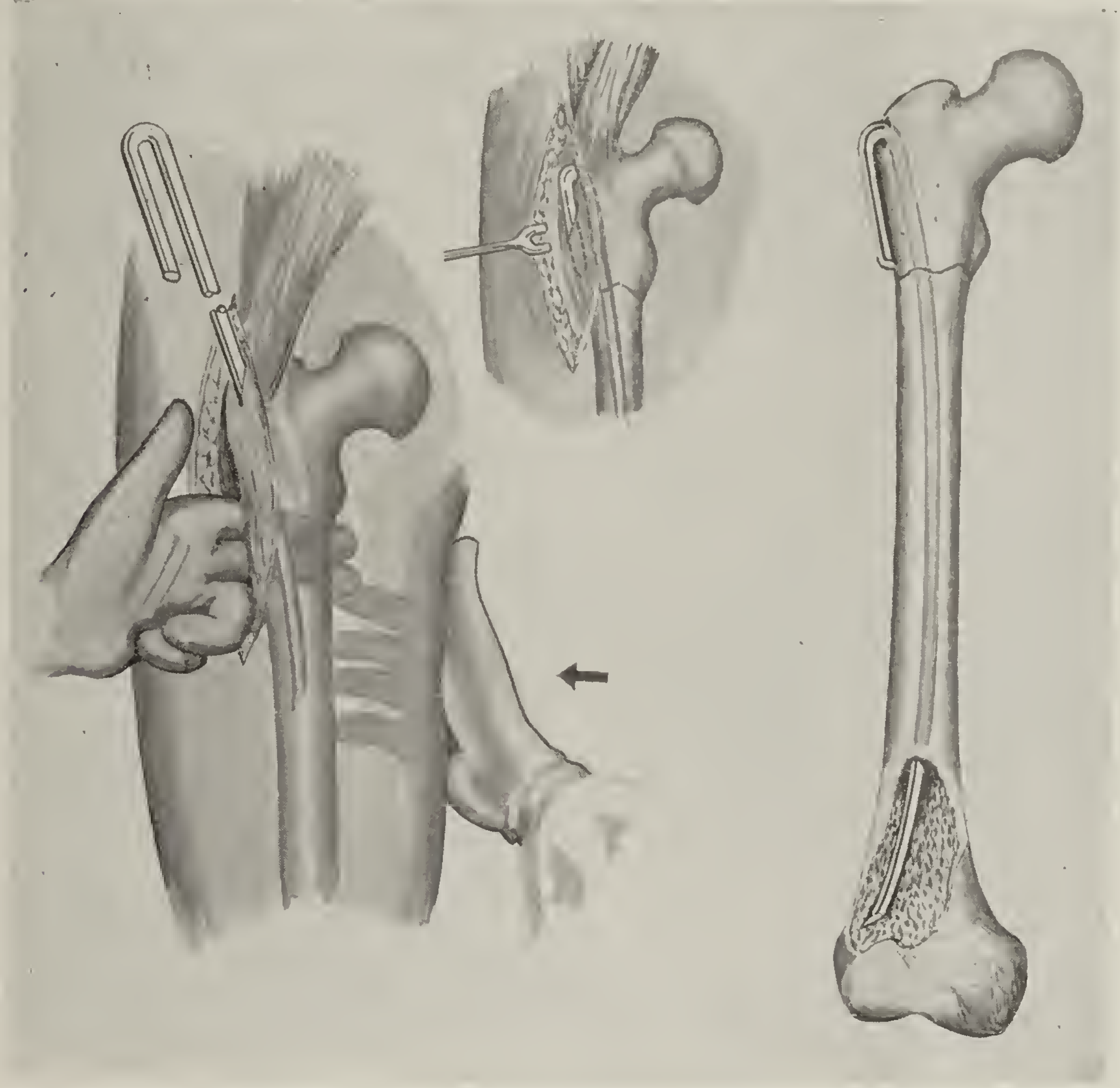
This region should be approached cautiously. In adolescents and vigorous young adults the cancellous bone of the trochanteric region is firm enough for stable fixation of the upper fragment.

In older people or inactive adults the trochanteric area has poorer substance and attempts at pinning or nailing can result in disaster. In such individuals there are often incomplete, comminuted fractures present in the trochanteric region which are not revealed by the x-ray films.

An unsuccessful attempt at pinning this area can result in a bag-of-bones fracture which is difficult to handle by any means.

Furthermore, it should be pointed out here that the successful use of a curved pin in the shaft of the femur is directly contingent upon stable pin fixation of the upper fragment. If a curved pin is used in this location without this stable fixation, it can rotate within the proximal fragment to give unstable fixation and angulation at the fracture site.

Yet, in a properly selected case "special" femur pin fixation can be utilized as a quick and simple procedure for a most gratifying result.



Technic

DISPLACEMENT: The ilio-psoas, attached to the lesser trochanter, flexes the upper fragment. The gluteal muscles, attached to the great trochanter, are acting with the short rotator muscles to abduct and externally rotate the short proximal fragment.

The adductors pull the shaft medially.

The vastus lateralis, arising just below the great trochanter, covers the fracture.

POSITION: On fracture table with moderate traction as for lower shaft fracture.

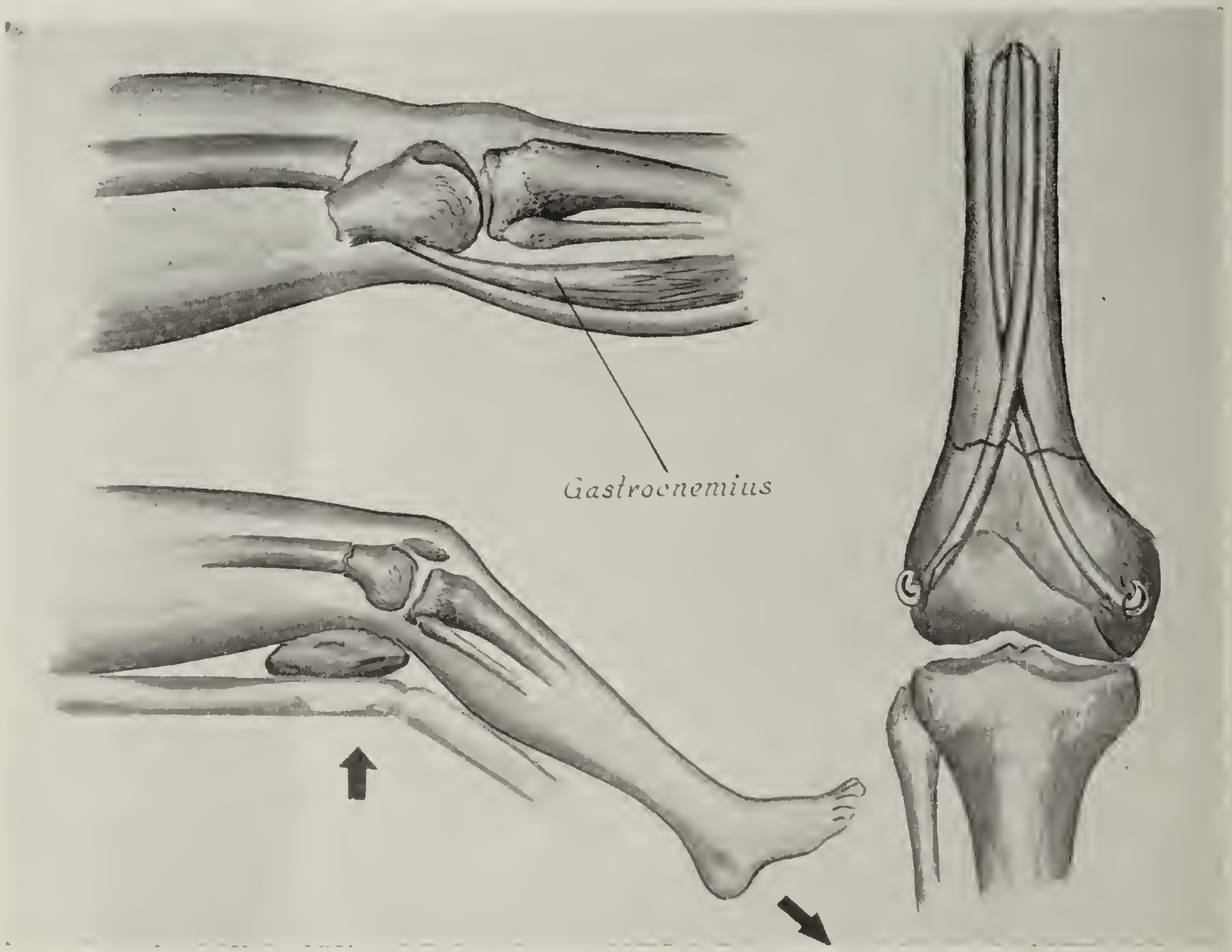
INCISION: Straight lateral, over trochanter and fracture area. It splits the fascia lata, and is carried through the vastus lateralis to expose the fracture. This brings the fracture surface of the proximal fragment partially in view.

REDUCTION AND PINNING: With the awl reamer make retrograde opening (one-fourth inch diameter) in the proximal fragment paralleling the outer cortex.

Insert pin in this opening from above, pushing point through gluteal tendon. Drive to fracture line. Grasp pin manually and manipulate it to maneuver proximal fragment into position. Make lateral manual pressure against shaft. When reduction is accomplished, drive pin home.

Set head carefully to avoid rotation of pin in proximal fragment. The long hook should penetrate the gluteal tendon insertion and cut slight groove in outer cortex for good purchase. This will prevent posterior rotation of the pin and angulation.

Complete operation as before.



Supra-Condylar Fracture

Here the lower fragment becomes the problem. It displaces and tends to rotate backwards because of the pull of the gastrocnemius muscle.

Reduction and pinning can usually be accomplished as a closed procedure. For reduction, moderate flexion of the knee relaxes the gastrocnemius pull. Upward pressure is made beneath the condyles as traction is exerted on the foot. This may be done with or without the fracture table.

This is the original fracture for which the present Rush pin was designed. Here, two pins are used; each three-sixteenths inch in diameter and nine to ten inches long.

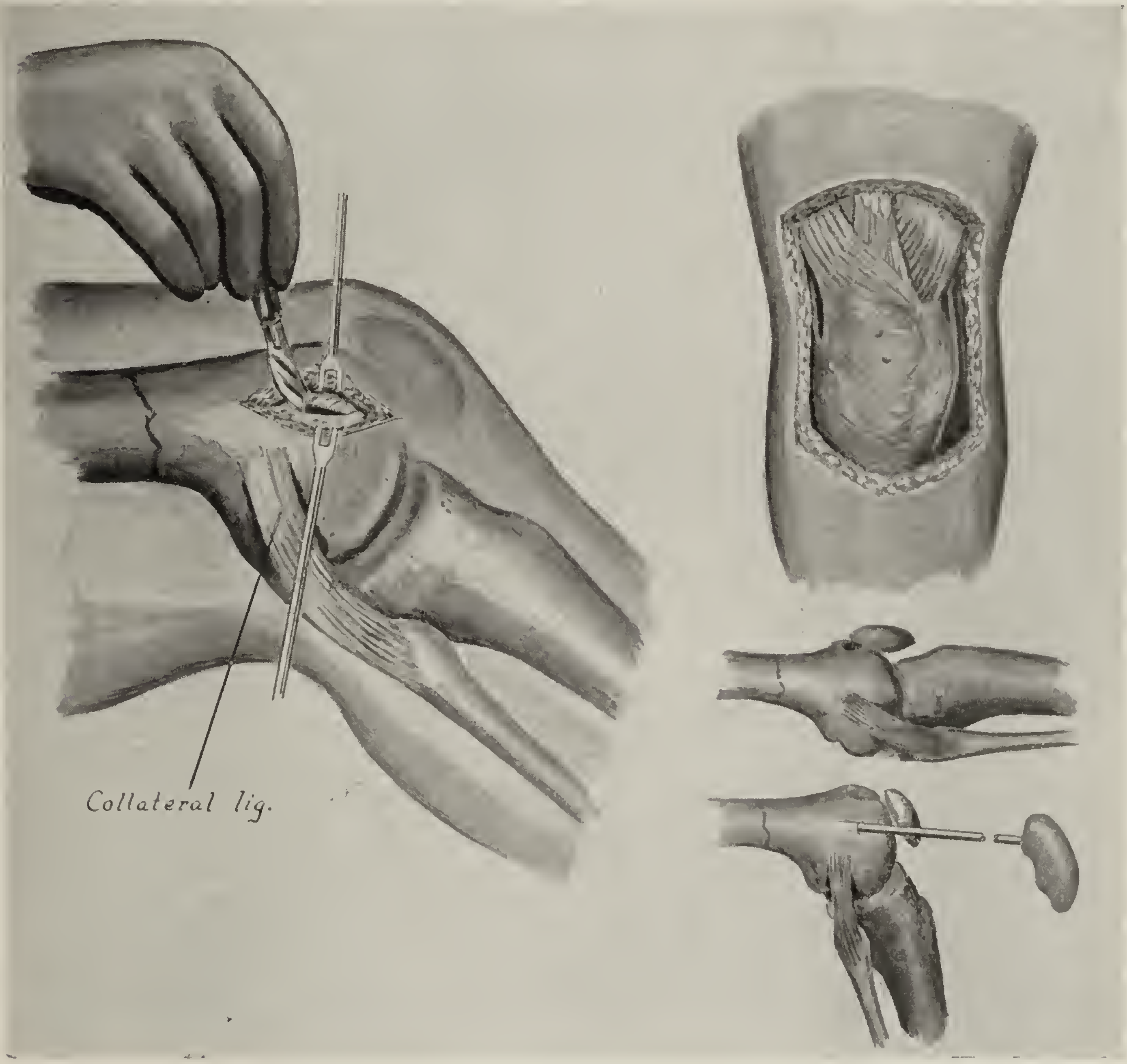
It might be well for the reader to review the chapters on "Dynamic Factors" and "Stability of Fixation" at this point.

The large medullary cavity and the trumpet shape of the lower end of the femur preclude satisfactory fixation by pin or nail driven downward from above.

The pins here literally "turn a corner", the sled-runner points, being deflected from the far cortices, travel up the medullary canal. The straight pin being forced into a curve exerts pressure at three points—and the two pins oppose each other to give stability by six points of pressure.

Several points previously mentioned are well repeated here:

1. Pins should be driven simultaneously to prevent displacing the shaft.
2. Pins should not be too long. They can impinge in a small medullary cavity above to give distraction and non-union. The proximal cortex can be split by such a procedure if the medullary cavity is very small.
3. Pins too short will migrate backwards.
4. The heads of the pins can migrate into the bone from dynamic force unless stress is relieved with the bending iron.



Anatomy

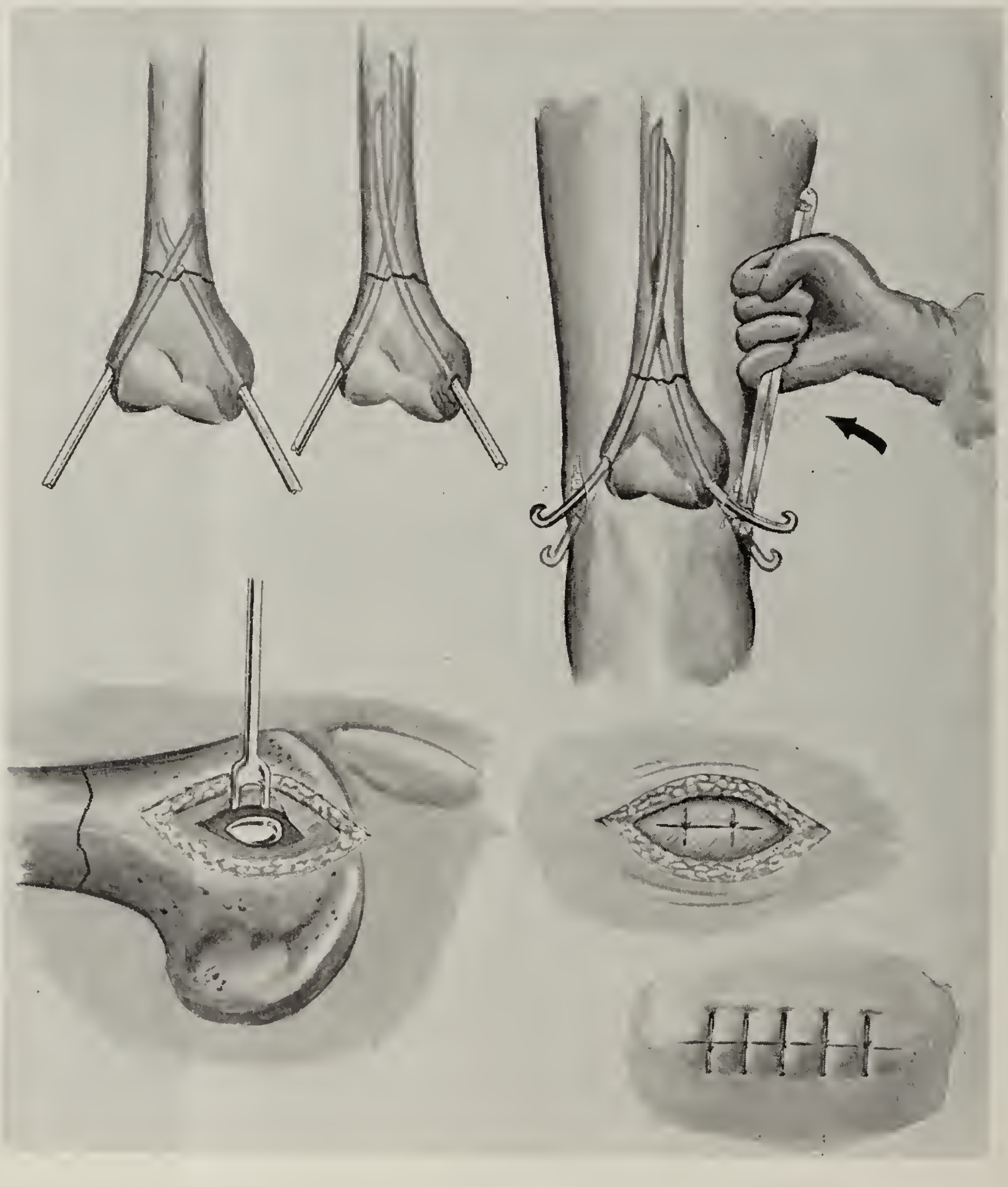
The condyles of the femur are enveloped in an aponeurotic capsule. On flexion and extension of the knee this capsule glides obliquely over the condyles. If this capsule is compromised by the pin, it will adhere to the bone to give limitation of motion at the knee.

The collateral ligaments must not be injured by the surgical procedure. Partially flexing the knee carries them backward out of harm's way.

These ligaments are not infrequently torn in injuries of this kind and are best repaired immediately. After the bone has been transfixed, it is possible to test the ligaments for laxity (lateral mobility of the knee).

The point of entrance for the pin is about one inch central to the periphery or articular margin of the condyle. This can be determined by palpation when the knee is flexed. The reamer must be inserted in the lateral plane so that it will approximate the long axis of the shaft. If the point of insertion is too far posteriorly or at the wrong angle, the condyle will angulate as the pin enters the medullary canal.

A one-inch incision is sufficient for inserting the pin and must extend through the capsule.



Double Pinning

For this procedure the pins should not be pre-curved but should be driven straight. The pin develops the curve from pressure within the bone.

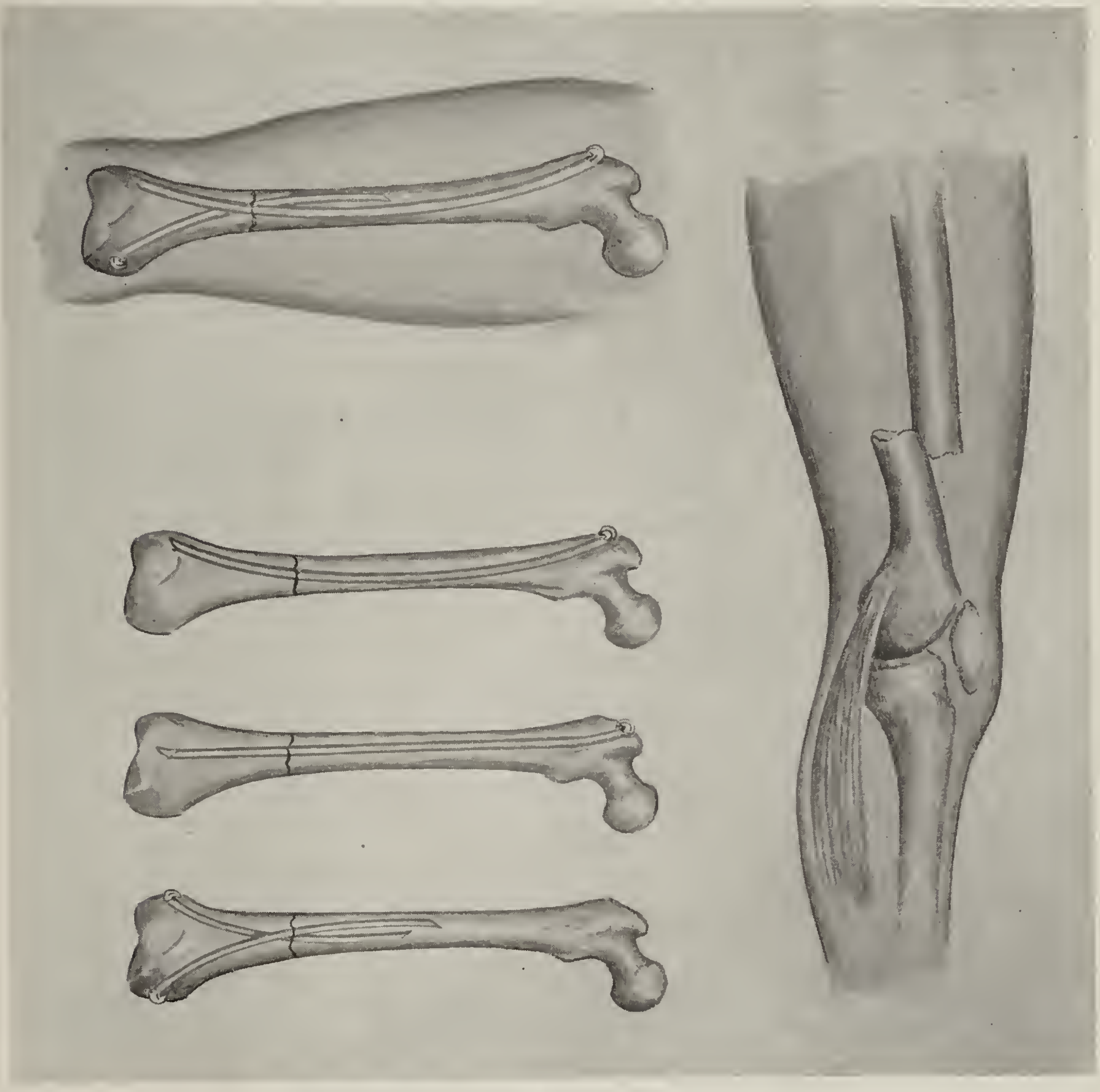
In the front view the two pins enter the condyle at such an angle that they cross at a point about four inches above the insertion points. The openings for the pins must be accurate and can be directed much more simply with the awl reamer than with the drill.

Each sled-runner point glides up the opposite cortex directing the pin into the medullary canal.

Before the pins are driven completely home, the heads should be stress relieved (bent) with the bending irons to prevent their cutting into the bone.

The capsule of the joint must be sutured over the heads of the pins, and the knee should be tested to be sure there is full range of motion at completion of the operation. This can save later embarrassment.

Splinting is usually unnecessary but might be needed in comminuted fractures or in elderly patients where fixation is not stable.



Junction Mid and Lower Thirds

The displacement is similar to but less marked than in the supracondylar region. Here semi-open reduction is usually indicated, but closed pinning can sometimes be done.

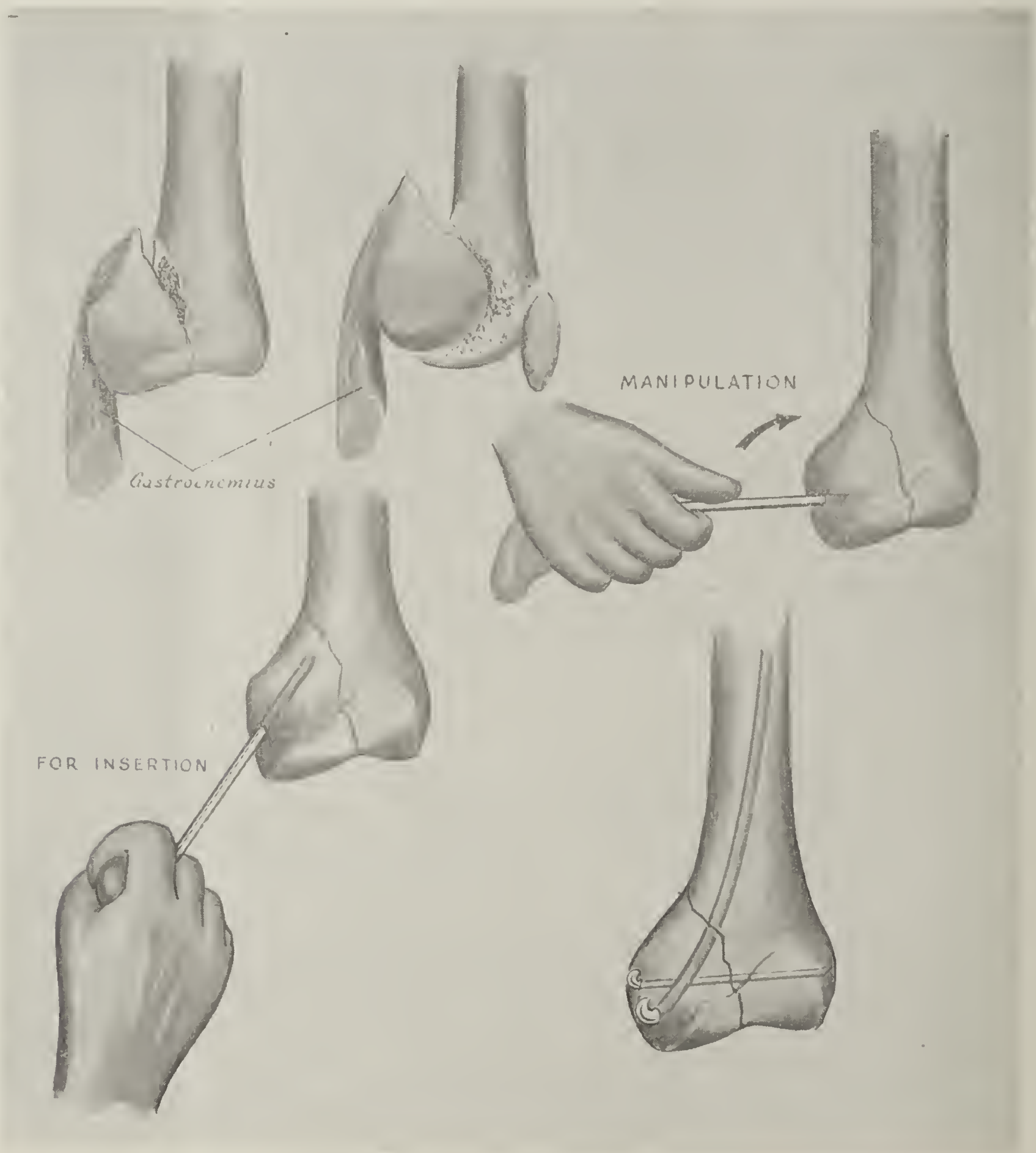
The reduction is accomplished either as in the mid-shaft or as for the supracondylar fracture.

Here it is difficult to get complete fixation because of the size and shape of the bone. Rocking at the fracture site delays healing. And this is the slowest healing area of the femoral shaft. It may require four to eight months to secure good healing in this area.

The best fixation (lower left) combines the curved 1/4 inch pin as used for the shaft with a curved 3/16 inch pin driven upward from the medial condyle.

The three alternatives shown give less stable fixation, but are at times adequate. Of these three the curved quarter-inch pin is best. The straight pin might permit rotation or soon work loose in the cancellous bone to permit rocking. The double pins, as used for the supracondylar fracture, permit more rocking at this level than one would expect.

External fixation is not necessary.



Femur: Condyle

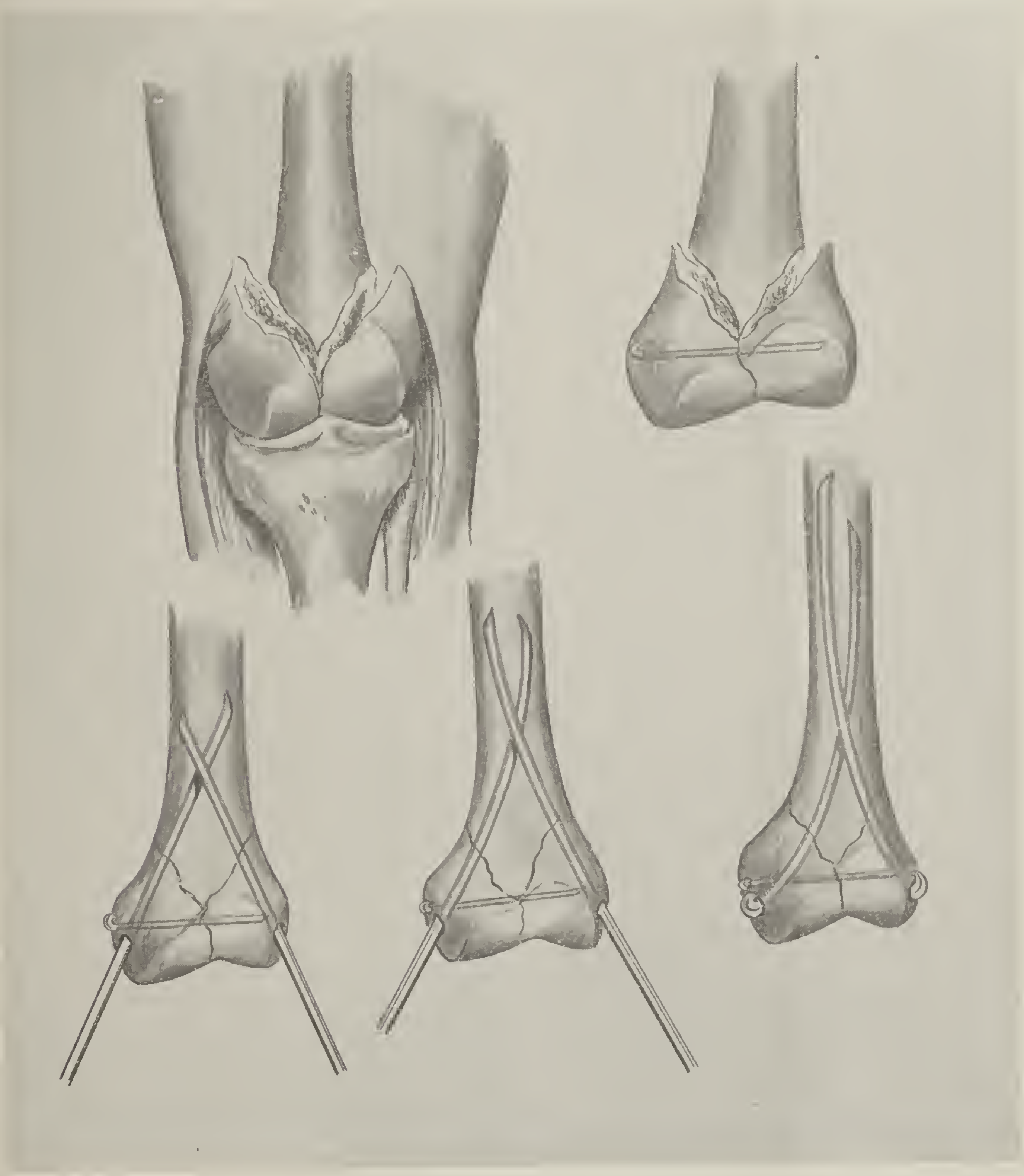
This type fracture results in widening. The fragment moves up, out and is rotated backward by the pull of the gastrocnemius muscle.

The medullary pin (3/16 inch) when properly placed will compress the fracture to give stable fixation and rapid healing.

This fracture must be accurately reduced even if it requires an incision. Closed reduction might be accomplished by the same procedure used in the supracondylar region—traction on foot with the knee moderately flexed and with counter traction upward beneath condyles.

The awl reamer might be used to lever the fragment into better position. The small transverse pin safeguards the integrity of the articular surface but is not always essential.

The single larger intramedullary pin is introduced just as for the supracondylar fracture. Individual judgment will have to be used as to how much to stress-relieve the head of the pin with the bending iron. Here a limited amount of pin pressure is necessary.



Femur Condyies: 'T' or 'Y' Fracture

The problem now becomes more complex but is dealt with by using the same principles as before.

The procedure is modified first to bring the two condylar fragments into proper relationship with each other. The articular surface must be restored to the proper contour, and this is safeguarded by passage of the small transverse pin.

The relationship of the condyles to the shaft is reestablished, and the two pins (3/16 inch) driven upward to transfix the supracondylar fracture as before.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

§

EDITORIALS

SCIENCE OR MANIPULATION?

A bill to legalize chiropractic by giving this cult its own licensing board is before our legislature. The bill passed the senate.

First, let us define terms. A *cult* is a system of treating disease based on some special and unscientific theory of disease causation. *Medical science* is knowledge of the human organism formulated from proved fact, by which disease is diagnosed and treated.

The chiropractor claims that germs are not the cause of disease. He does not believe in vaccines, serums, and inoculations, which constitute the chief advances made by scientific research in the past fifty years in preventing disease. He tries to cure all ailments by spinal adjustments. (According to proved fact, the structure of our spinal column is so sturdy that if a part of it does get out of place, more than mere manipulation is required to restore it.) His training in diagnosis is generally no more than the average high school science pupil gets.

Scientific medicine can prove the existence of and distinguish separately several hundred germs and parasites which are capable of destroying human life. Only a few years ago did we learn about the malarial parasite, injected into the human bloodstream by a certain Anopheles mosquito which had destroyed countless thousands of lives. More recently have we been freed of the awful toll taken by diphtheria, typhoid fever, and tuberculosis—all because we have learned to whip the germs that cause them. By knowing the germ that causes pneumonia we now have a medicine that has practically conquered this killer. Public health forces are whipping gonorrhea and syphilis because medical science found the germ and spirochete that cause these diseases, and then gave the antibiotic to kill the organisms. Just suppose that an intelligent man, say a member of the legislature, should contract a red-hot case of gonorrhea. Would he take to a chiropractor for a spinal adjustment to cure the disease?

When Christ was born, life expectancy was about 20 years. When the War Between the States was fought, life expectancy was 40 years. Today it is 70 years. And it is quite certain that chiropractic, which had its beginning about the time of World War I as a business venture rather than a scientific profession, had nothing to do with adding a day to our present life expectancy. In all probability many have had life and years taken away by trusting in its false theory.

The eyes of the nation are on Mississippi in many respects. Our health department has ranked at the top for many years, and is worthy of help in its present hour of need. Mississippi also leads in the fight against tuberculosis and mental disease. The state is entering a new era in medicine, with its unequalled system of hospitals and the soon-to-open new nine-million-dollar medical school. And medicine is striving to add to its other conquests of disease, polio, cancer, heart disease. It needs every ounce of moral and financial support the public can give. Yet, all this progress and expenditure of money and effort are anathema and incompatible to chiropractic.

Some chiropractors are very personable men who know their public relations and can even qualify as rather astute psychologists. Some are fairly conservative in confining their treatment to manipulations of the backbone. But many ignore the boundaries by which they claim to circumscribe themselves. We put up danger signals to protect the unknowing from being preyed upon by false healers. Until our people are educated to the point of knowing what is good and what it not, ignorance and gullibility on the part of the lay public must be safeguarded. It was in recognition of this fact several years ago that a sound-thinking legislature put into effect our Medical Practice Act. To give a cult the legal right to set its own standard and multiply its number by the hundreds overnight, is in direct violation of one of our state's statutes. It furthermore stabs at the high standard presently set for the candidate to practice medicine. If this standard is just and safe, then why not require it to be met by all who aspire to practice any form of the art of healing? When a chiropractor advertises as a doctor, the uninformed layman assumes he is competent to treat all disease. When he is licensed, the state actually vouches for his competency.

§

CONTACT YOUR LEGISLATOR

There is a program in Mississippi known as the School Health Program, which is administered by Mississippi State Board of Health, and the funds used are appropriated in their entirety by the Mississippi State Legislature. This money is used by the different counties to aid indigent school children in obtaining medical care, such as tonsillectomy, eye examination, and procuring of glasses when necessary, and other necessary treatment. All of the eye examinations have been done by ophthalmologists or eye, ear, nose, and throat physicians at a greatly reduced fee. These examinations and the cost of glasses, which also were sold at a greatly reduced fee, have been paid for equally by funds administered by the State Board of Health and by monies raised through civic clubs, friends, or private individuals.

The Mississippi Optometric Association, through its Council, and Public Relations representative, Mr. Richard Billups, have asked that optometrists be allowed to do these eye examinations under this medical program. This request was refused by both the Mississippi Eye, Ear, Nose, and Throat Association and the Eye, Ear, Nose, and Throat Section of the Mississippi State Medical Association. The Mississippi Optometric Association has threatened to take this matter before the State Legislature to force these recognized medical organizations to allow optometrists to do these examinations. Eye physicians in Mississippi are not fighting this proposed legislation for the monies involved, but because the program is a medical program, on which an attempt is being made by a non-medical group.

Such a situation is of paramount concern to the whole medical profession and does not entirely affect the EENT group alone.

The Mississippi State Medical Association in session at Biloxi in May, 1953, passed a resolution unanimously as being opposed to optometrists doing these medical examinations. The council of the Mississippi State Medical Association, at its meeting in October, 1953, in Jackson, voted to aid the eye physicians of Mississippi in this fight, and further that it be conducted in the name of the Mississippi State Medical Association. The Mississippi Eye, Ear, Nose, and Throat Association has employed counsel to be paid for through an assessment of its forty members to fight this legislation. They are contacting legislators over the state about this matter and solicit the support of the medical profession in Mississippi.

We believe each physician should feel a personal responsibility to contact his legislators as soon as possible. Write or wire or call your representative. Explain to him as you would a patient the danger of such legislation.

NEWS AND COMMENT

PUBLIC HEALTH PERSONNEL PROBLEMS IN MISSISSIPPI

Personnel shortages continue acute in public health nursing. I regret, too, that the shortage of medical public health officer administrators has grown more critical during the past year. We ask that our colleagues in private practice will increasingly recognize the serious problems which face public health and that they will join us in an aggressive campaign to fill some of the gaps. Physicians, middle aged and past, who need to regulate their hours of work to reasonable daylight hours with liberal annual and sick leave and all legal holidays, for hobbies, rest and recreation, are invited to contact us for full information about the public health program.

Felix J. Underwood, M. D.
State Health Officer

DR. CALDWELL ELEVATED TO PRESIDENCY
DR. JOE VERSER PRESIDENT-ELECT

The Mid-South at Memphis was quite a success this time. The attendance was better, and the spirit was very fine.

Dr. R. B. Caldwell of Baldwyn is the incoming president. He is well known and will be very active for this great medical assembly the coming year. Dr. Joe Verser of Harrisburg, Arkansas, president-elect, is a popular and a most active young man in medicine, who will represent his state proudly.

The Mid-South can well be called the father of this type of medical meeting. It secures the best men in the nation as essayists, paying their expenses of the trip. Funds from the exhibitors finance about 60 to 70 per cent of the expenses. Twenty-eight years ago Dr. Gilbert Levy was selected to take charge of the exhibits. He has done a fine job. The exhibitors do not have to look up a new man every year and or adjust to a different place of meeting. It would seem wise for Mississippi to select a man to have charge of the exhibits and let him keep the job from year to year, our executive secretary perhaps, and then use the income in a wise and conservative manner for the good of the scientific part of the association.

STATE MEETING

Let us turn to our state meeting in Jackson, May 11-13, and make it the best the association has ever had. Our state is on the up and up in the field of medicine as never before in its history.

We understand that Dr. Arthur Guyton is now writing a medical book. He is another who will give Mississippi eminence, medically speaking.

§

Urge your legislator to be liberal in appropriating adequate funds for public health.

§

Campbell Clinic announces the association of Dr. Lee W. Milford, Jr., in the practice of Orthopaedic Surgery. 869 Madison Ave., Memphis, Tenn.

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ABSTRACT FROM PEDIATRIC LITERATURE

Harvey F. Garrison, M. D.

Congenital Lobar Emphysema. Ross Robertson and E. Stewart James, Vancouver, B. C. Pediatrics 8:795-804, December 1951.

Attention is directed to 5 cases of regional emphysema of congenital origin occurring in infancy, in which the emphysema involved an entire lobe. The bronchial obstruction appeared to be due to folds of mucosa or to weakness of the bronchial wall, forming a check-valve mechanism. Inflammation was not an etiologic factor. The condition is presented as a surgical emergency of infancy which may be diagnosed without much difficulty and treated by lobectomy with gratifying success.

The initial symptoms are usually attacks of dyspnoea and cyanosis in an infant who was previously well. Roentgenograms of the chest show shifts of structures and a large area of decreased density. The appearances may suggest other conditions such as congenital heart diseases, atelectasis, interstitial emphysema with spontaneous pneumothorax, agenesis of a lung, congenital tension cyst, regional obstructive emphysema, foreign body in a bronchus and diaphragmatic hernia or eventration. The differential diagnosis is given.

In a few cases of congenital lobar emphysema that have been studied and reported, there is evidence of a check-valve mechanism in the affected bronchus. In the similar disturbance of acquired origin, the cause is usually bronchitis and viscid secretions, obstructing the lumen as a check-valve. Fever and other signs of infection differentiate this form of congenital lobar emphysema. If treated early by antibiotics and drainage or aspirations of the secretions, a cure may be effected, whereas congenital lobar emphysema fails to respond to any treatment other than lobectomy. When regional obstructive emphysema becomes chronic, emphysematous bullae may form and surgical intervention be necessary.

Recognition of this condition presents a greater problem than management; but the diagnosis should not be difficult providing the condition comes to mind. Infants of this age group stand lobectomy surprisingly well. Three patients in whom lobectomy has been performed are now apparently perfectly healthy. This is in sharp contrast to the hopeless prognosis in untreated cases.

COMMENT: This is quite an interesting sub-frequently. Of course, there are many lives saved by such operations all over the country, but the decision for or against operations in any case of pulmonary involvement is one which should have very serious consideration.

ject and one that should command attention of the medical profession everywhere. However, it is my opinion that there are at present too many operations on the lungs. Complete or partial lobectomies are, in my opinion, performed too

Woman's Auxiliary

ALERT FOR MARCH 30!!!

Time once again to complete plans and stimulate enthusiasm for the observance of Doctor's Day. This is the time we pay tribute to our physicians, both living and dead, by some recognition of our great debt to those who have so unselfishly labored long hours to care for the sick and guard the health of our nation.

See that every doctor, married or single, receives a red carnation on March 30.

Mail cards which carry a message of appreciation to the doctors. Example: The Woman's Auxiliary to the .... is very proud of you and your noble work. On this Doctor's Day we wish to pay tribute to you in this simple manner.

Place flowers in churches, March 29. Some ministers will agree to dedicate their sermons to the medical profession if approached on this subject in time.

Dedicate one of your auxiliary meetings to the observance of DOCTOR'S DAY. Read the History of Doctor's Day. Ask a beloved and honored doctor to give a short talk. Give every doctor present a red carnation.

Publicity: Newspapers, radio and possibly television. Many reporters and news commentators would be happy for the opportunity to help honor our doctors just for the asking.

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(2) $10 award to the Auxiliary having less than 75 members. Honorable Mention.
(3) $5 award to state having best state-wide observance. Honorable Mention.

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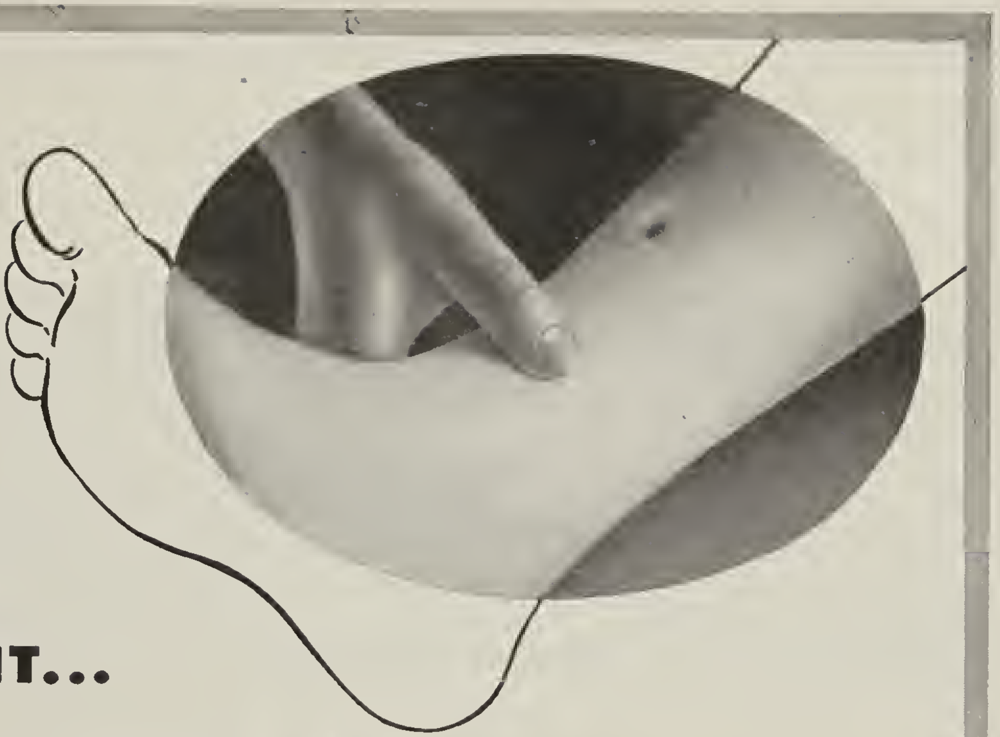

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1. Abramson, Julius, Bresnick, Elliott, and Sapienza, P. L.: New England Jour. Med., 243:44, July 13, 1950.

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1. Kline, P. R., and Caldwell, A.: New York St. J. M. May 1, 1952.
2. Combes, F. C., and Zuckerman, R.: J. Invest. Dermat. 16:379, 1951.
3. Kline, P. R.: Current News in Derm. & Syph., May 1952.

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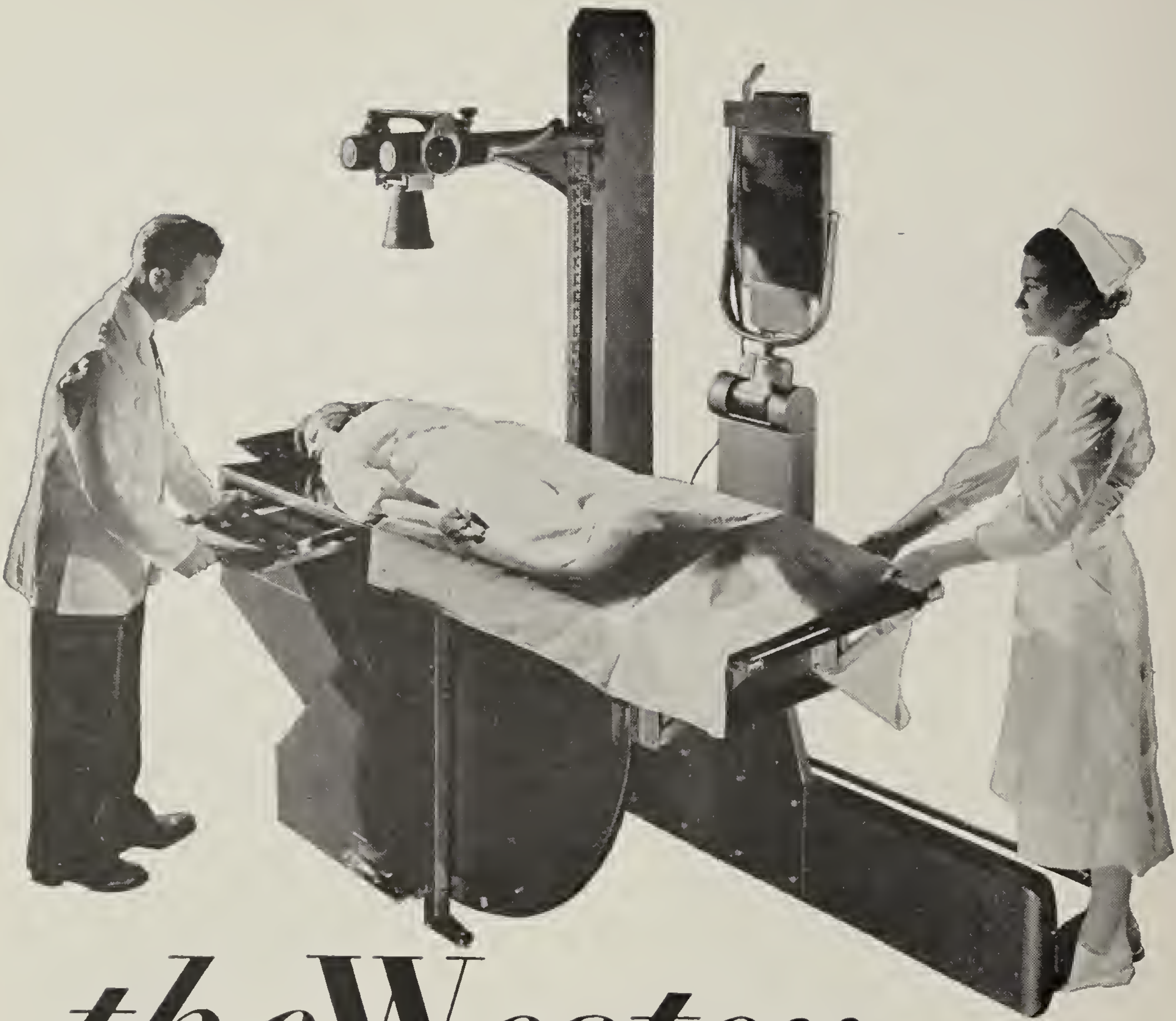

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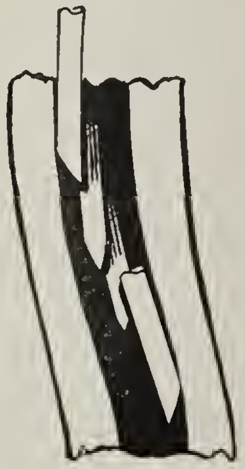

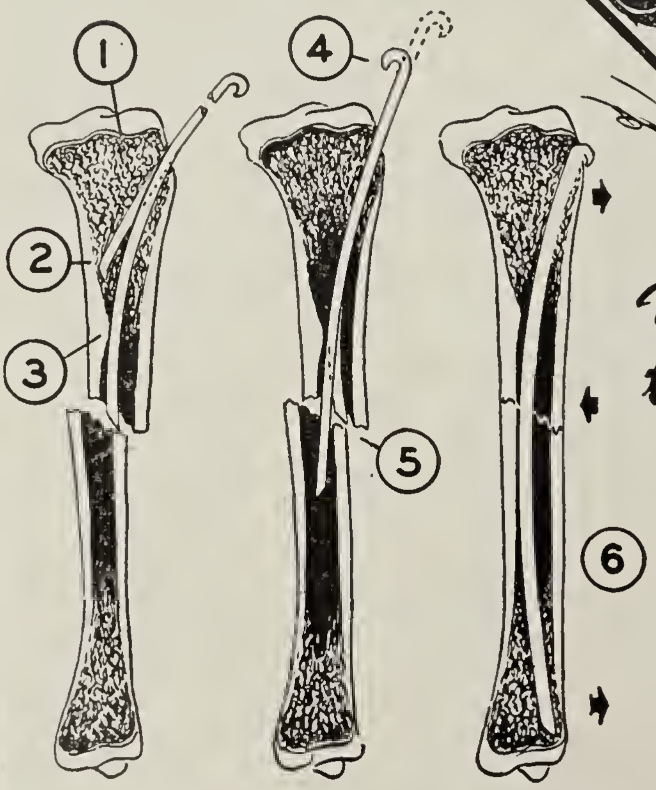

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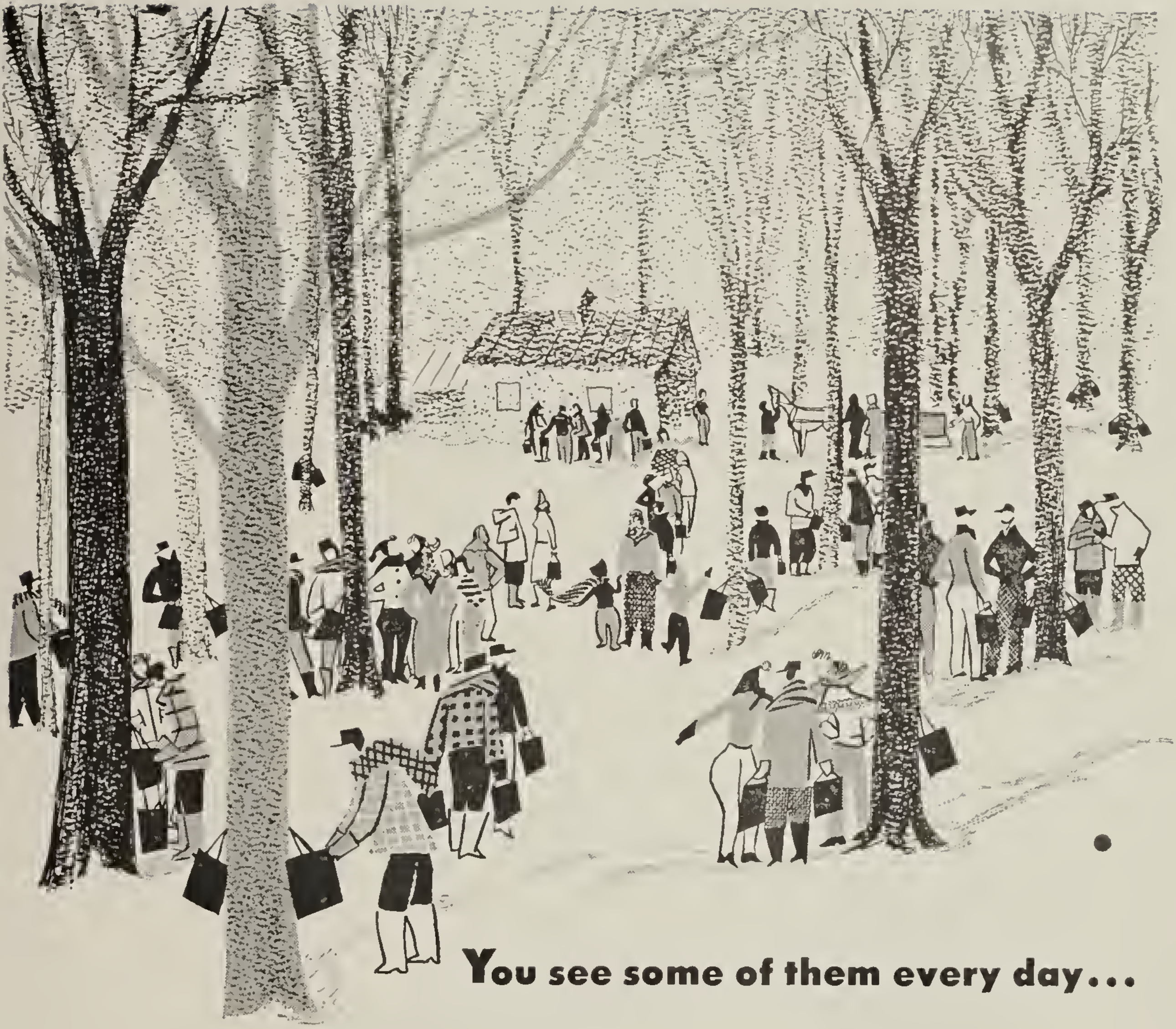

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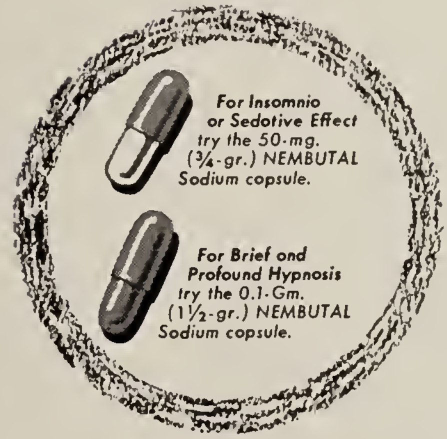

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The Metabolic Concept of Gynecologic Care

HUGH G. HAMILTON, M. D.
ROBERT S. HIGGINS, M. D.
WEBB S. ALSOP, JR., M. D.
Kansas City, Mo.

HISTORICALLY THE life cycle of the human female has been regarded as being divided into five phases, the childhood or preadolescent time, the pubertal phase, the reproductive time, the menopause, and, lastly, the postmenopausal or deteriorative phase. All of these phases of female life have been regarded as being as immutably fixed as the course of the stars in the heavens, and as Mark Twain said about the weather "everyone talks about it and no one does anything about it".

The reason that "no one does anything about it "is because the lay public (and, unfortunately, many of our profession) regard the endocrine system as being totally, or at least primarily, concerned with the sexual and reproductive function in life. Yet, nothing could be further from the actual truth. Diabetes, because it threatens life, is recognized as a metabolic disease due to endocrine malfunction, but no one pays much attention to the poor woman with a hypo-adenalism which shows a flat glucose tolerance curve. Physicians pay attention to a cretin, because this thyroid malfunction yields an obvious dwarf with a marked intellectual depression, but what of the slender, nervous, exhausted woman with irregular menses in interval, duration, and volume who is also an hypothyroid individual? This type can appear at any age and including tumors of pelvic origin, is still the commonest cause of menstrual aberration.

The woman who has scant menses of short duration, prolonged and irregular interval and has concomitant hot flashes may be accorded the courtesy of a brief, impatient and unsympathetic interview by a physician, who mentally catalogues her as a neurotic, and be turned over to his nurse for an unsupervised course of estrogen shots of variable strength and duration. He is too busy searching for a malignant melanoma about which he can do nothing, to help this woman who can be restored to emotional stability and physical efficiency. However, the woman who is ten years younger who is having irregular, heavy periods, is tired and exhausted and who upon questioning admits that the last week before her period she is quite emotionally unstable, is given a prescription for some worthless multiple vitamins and quietly shoved out the door with the inaudible, but nonetheless fervent, prayer that she will not come back. She needs her estrogen in properly guarded doses just as badly as does the previous lady.

Of recent years Howard Taylor, in his many talks on the subject, has commenced to make the medical profession cognizant of fluid retention and especially of pelvic edema. This, however, is but one factor in the general metabolic disturbances, associated with minor endocrine imbalance, that arise to bother women. This fluid retention is usually associated with mild hypopituitary and hypo-adrenal function in women and many of these women, with their exhaustion effect, will demonstrate flat glucose curves.

Several years ago in dog experiments, Hamilton, R. T., and Lolich, Jos., by ligating all adrenal veins and shunting all venous blood from the adrenal glands through the collateral circulation into the kidney, produced glucose curves just like those seen in these women. The adrenal secretion in these animals is destroyed or filtered out in the kidney thus causing the flat glucose curves. It is also generally accepted that the metabolism of sodium and its attendant retention with concomitant edema is associated with hypofunction of the pituitary as well as the adrenal glands.

By the same token we now generally accept the importance of the thyroid gland in the general metabolism of proteins within the body. At the same time in recent years we have become cognizant of the importance of androgens and estrogens in the maintenance of the proper metabolism of calcium and phosphorous in the body. These two secretions act in almost precisely the same manner in maintaining the proper utilization of calcium and phosphorus and are practically interchangeable in therapeutic effects. This is important because as a rule of thumb if the patient needs the androgen-estrogen therapy, if she has

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* Presented at the sixty-fifth annual meeting of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, Feb. 9-12, 1954.

hypermenorrhea or sore breasts we use androgens whereas if the breasts are not involved and there is hypomenorrhea we use estrogens. An excellent example of the late effects of androgen-estrogen deficiency is the osteoporosis seen in people from the latter thirties on in life. This process can be arrested by dietary measures coupled with androgen-estrogen therapy and in some cases even recalcification can be made to occur. One has only to remember what happened to the gastrocnemius muscle of the frog in physiology in calcium-poor solutions to see instantly the application in the patient with poor muscle tone, sore muscles, and easy fatiguability.

If one is to carry the reasoning of Howard Taylor further forward to its general and logical conclusion, one must recognize that people reach the peak of their endocrine, and therefore metabolic, efficiency in the late teens and early twenties. From that point onward life is a process, metabolically speaking, of gradual deterioration. The deterioration will appear earlier in women than in men because each month they swing to a lower endocrine ebb and the process will first manifest itself in the premenstrual phase of lowest metabolic status.

If one will then by careful examination and study exclude the presence of anatomical pathological lesions, such as malignancies, fibroids, polyps, ovarian cysts, solid ovarian tumors, *et al*, one can then proceed to deal with the pathological physiology that is present. The commonest group in which these metabolic aberrations are found is the infertility group of cases, and the next group is of women who have had one or more children in the past and who are now having difficulty in conceiving again.

This is logical because the major function of the endocrine system is, not the sexual and reproductive function as is commonly supposed, but the maintenance of the general metabolic status of the individual. These infertility cases — barring those with blocked tubes, husbands with poor sperm and other local pathological lesions—are women of poor metabolic status with concomitant aberrations of reproductive function. The secondary infertility cases are women who were originally metabolically substandard, not so bad but that they could conceive one or two times, but after the stress of one or two pregnancies are now sufficiently substandard that they are now infertile also.

The women of this type, and everyone of you has had them in your office, have a variety of complaints, but if you will question them about these things they will fall into the following group of complaints: The hypothyroid cases will admit that in spite of an adequate night's sleep they awaken tired and then pick up an hour or two later. Their skin and scalp are dry and especially in cool weather their skin feels tight and itchy after bathing and their fingernails are either very soft and bend easily or else keep breaking off. Frequently, they are also chilly where others are comfortably warm.

The ovarian deficiency patient notices first that the last few days before her period she is emotionally unstable and cross with her husband and children. As it gets more severe she does not sleep soundly, is upset by strangers, worried in crowds, avoids definite decisions, cries easily and then starts with nocturnal hot flashes and finally has hot flashes all the time. There is also a loss of libido.

The edema syndrome starts with the patient awakening in the morning with her eyelids and hands puffy and she notices that her rings are tight until she has been moving about for an hour or two. If she sits too long without moving, her feet and ankles will swell. She also notices that after intercourse, especially if she becomes quite sexually aroused, that her lower abdomen is sore and tender for several hours or even days. She also has a sensation of general weight and soreness in her pelvis, worse premenstrually, even though the pelvis is anatomically normal.

If one accepts the thesis that this situation appears in most women in their later twenties to the early thirties and gets progressively more marked with the passage of the years, this is then the earliest manifestation of the aging process in women. It does appear earlier, even in the teens, in those women of lower metabolic and endocrine stature who never reach an adequate level. The menopause then becomes only an incident in a deteriorative process that has started twenty years or more before.

If this be true, then proper therapy in an attempt to arrest this aging process in women is dietary, but in practice we check first the complete blood count, the serology, the sedimentation rate, the blood sugar, the N.P.N., the B.M.R., urinalysis and Mantoux tests. If the Mantoux is positive we get a chest plate. Assuming that all is within normal limits, except a low B.M.R., we then outline a course of therapy.

First of all we attempt to explain to the patient that what she has is a deficiency just as if she had diabetes. She is told that it will not kill her as unattended diabetes will, but that if she gets careless about her diet and medication after a few weeks of feeling well, she will be back with the same complaints again. Most of them will stop after a few months and then will come in a few months later and say, "Go ahead and say I told you so".

First, they should be placed on a high-protein diet, we say two eggs or an equivalent amount of lean meat at breakfast and four ounces of lean meat or cottage cheese at noon. For the evening meal we recommend six to eight ounces again of meat. If they need to lose weight we forbid fried, creamed or breaded foods and recommend boiling, broiling, baking or roasting. For the rest of their food we recommend citrus fruits and green vegetables.

If the edema history enters into the picture, we tell them to avoid canned foods and use fresh or frozen foods to avoid the salt, sodium citrate and sodium benzoate that is present in most canned foods and condiments such as tomato catsup. Also they must be warned against soda and cream of tartar as well as all of the fizzy alkalis advertised on the radio.

If the thyroid is low, we start them out on one or two grains of thyroid extract daily and have it taken in the morning after breakfast. They are told to see us every two weeks for at least two or three visits after a change in amount of thyroid and instructed to come in at any time if they have palpitation, dizziness or headache. It seems to us that careful checking of the weight, pulse and blood pressure is the most accurate estimation we have of the effect of thyroid therapy as well as talking to the patient and finding out how she feels.

As far as the estrogen-androgen therapy is concerned, we vary our usage widely. In the mildly deficient cases whose only symptoms are premenstrual emotional tension we usually give orally about 0.3 mgm. premarin daily. This usually gives satisfactory results and will not disturb the menses as shown by Willis Brown. If the woman also has sore breasts premenstrually and excessive bleeding with the periods we usually give either 3 mgm. daily of testosterone propionate under the upper lip or 6 mgm. every other day.

In the older women with more severe symptoms including hot flashes, we usually start out with hypodermically administered natural estrogens in oil and give the first dose of 2000 units. This is increased at the rate of 1000 units per dose and given twice per week. As soon as she is feeling well or gets lower abdominal cramps, the dose is reduced by 1000 units and she is carried on that dosage for two or three weeks. If she is still feeling well she is switched to an equivalent dosage orally of natural conjugated estrogens. Very few women will ever require more than 5000 to 8000 units of estrogen by this technique, and many failures are due to overdosage, as overdosage will aggravate symptoms just like a deficiency will. Properly controlled usage of estrogens does not cause malignancy in the human female.

In the patients with the edema syndrome, the edema is usually worse in the last half of the menstrual cycle. At first, we have them on the rigid sodium restriction and give them one gram of ammonium chloride daily for three days and then omit one day. When the edema is controlled, they need to take their ammonium chloride only for the last half of the cycle. Eventually, most of them get so that they can control it by diet alone and only use the ammonium chloride as a standby when they have trouble.

In dealing with all of these patients, it is explained to them that we are teaching them a mode of life, that they should be in every two or three weeks at first, but as soon as their dosages are standardized they should be in four times a year for a checkup.

Once a year they should be examined to include blood count, urinalysis, heart, breasts and complete pelvic examination. They are instructed to report at once if they have pain or lump in the breast, pelvic pain, abnormal menses, or postcoital bleeding.

New and additional knowledge may at any time force us to change our concept of the metabolic side of gynecological care, but in the light of present facts we regard the above régime as an attempt to arrest the aging process in women.

Bryant Bldg., 1102 Grand Ave.

Brain Tumors*

BRONSON S. RAY, M.D.†
New York, N. Y.

Brain tumors are relatively uncommon but not to be considered rare. In a survey by Kernohan of the Mayo Clinic it was found that in recent years about 9 per cent of all neoplasms removed surgically were located in the central nervous system or its meninges. During the same period the incidence of carcinomas of the stomach and rectum was about 10 per cent, of the colon about 9.5 per cent and of the female breast nearly 10 per cent. Of the neoplasms of the central nervous system the ratio of incidence in the brain and cord is about four to one.

Other conditions, not within the scope of this article, which may play the part of an intracranial tumor are abscess, hematoma of the parenchyma or meningeal spaces, aneurysm, tuberculoma, gumma and parasitic cysts; these constitute about 5 per cent of the intracranial space-occupying lesions.

In the past 50 years there has been great acceleration in the acquisition of knowledge of the function of the nervous system and in the development of the special field of neurosurgery. Evenso, there are many unsettled questions and evident shortcomings. It is appropriate and important that inventory be taken periodically and that the medical profession, as a whole, be informed of current methods of diagnosis and treatment, and of what can be expected in prognosis of brain tumors.

The results of treatment are largely dependent on the rapidity of diagnosis, the cell type of the lesion and the location of the tumor, assuming, of course, that the surgeon's skill is all it should be.

PATHOLOGICAL CLASSIFICATION

Broadly speaking, brain tumors like other neoplasms are malignant or benign, and at least 50 per cent can be regarded as benign or relatively so. But there is a more practical classification of brain tumors into four general groups.

First are the gliomas which are made up of glial cells and are the true primary tumors of the brain; they constitute nearly 55 per cent of all tumors. In the second group are the fibroblastic tumors, meningiomas and neurinomas comprising about 25 per cent of the total. These tumors as their names imply arise respectively from the meningeal coverings of the brain and from the cranial nerves (usually the acoustic nerve.) A third group is made up of glandular tumors, principally of pituitary origin and an occasional pinealoma; they account for about 8 per cent of the total. The last group, constituting about 12 per cent, includes metastatic tumors, vascular tumors and a great variety of less common neoplasms, many of which are congenital. Some of these miscellaneous tumors are craniopharyngioma, epidermoid, teratoma, cholesteatoma, chordoma, colloid cyst of the third ventricle and papilloma of the choroid plexus.

THE CLINICAL PICTURE

The importance of early diagnosis can hardly be over-emphasized since the chances of a patient's surviving an operation are usually increasingly less as the tumor progresses. The symptoms which may result from an intracranial tumor are multitudinous, but of the greatest practical value is the recognition of early symptoms and their subsequent evolution. No doubt much depends on the acumen of the attending physician, but failure to recognize the presence of a brain tumor usually has less to do with brilliance than with diligence of the physician. There is no substitute for a careful investigation of the history and performance of a complete physical examination. The merest tyro who looks at the ocular fundi and tests the plantar responses may outshine a more learned physician too busy or too careless to be thorough. The neurologist or neurosurgeon into whose hands the patient finally falls may simply question why others were so tardy in reaching a diagnosis, but there is often room for charity in the matter since with all the aids to diagnosis recognition of the lesion may still be problematical.

The manifestations of brain tumor fall in two classes: those resulting from increased intracranial pressure and those caused by direct irritative or destructive effects of the tumor on specific regions of the brain. While it is always the hope that the presence of a tumor will be recognized before a significant increase in intracranial pressure develops, tumors in so-called silent areas of the brain and those that block the circulation of cerebrospinal fluid may cause only increased intracranial pressure.

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†Department of Surgery, the New York Hospital-Cornell Medical College, New York City.

*Presented at the Mid-South Postgraduate Medical Assembly, Memphis, Wednesday, February 10, 1954.

The features that make for precise localization are those that have to do with motor and sensory function. That is to say, the development in a local area of the body of a change in muscle function such as weakness, rigidity, incoordination, adventitious movements, reflex changes or convulsions will indicate involvement of motor areas of the brain, the cortex, the tracts or specific cranial nerves. If there are defects or aberrations in perception of smell, vision, hearing, or of the various tactile senses over the body these too may point to specific structures of the brain. Exceptions sometimes exist because of the remote effects of altered intracranial pressure as exemplified by a hemiparesis or even a lateralized fit which may occur with a tumor that occupies a region removed from the motor cortex and tracts. But the localizing value of certain sensory disturbances is highly reliable. For example, an uncinate fit in which the patient experiences fleeting episodes of unpleasant odors occurs only when the uncus in one of the temporal lobes is directly affected by tumor; loss of discriminatory and position sense in an extremity with preservation of other forms of sensation indicates direct involvement of the post-rolandic sensory cortex or its immediate subcortical connections; and, a homonymous hemianoptic visual field defect results only by direct involvement of the contralateral visual pathway somewhere between the optic chiasm and the occipital lobe cortex.

Disturbances in speech are generally of two types: those that have to do with expression and those that have to do with reception, and if there be an aphasia of any degree or type it means that the tumor lies above the tentorium in the temporal lobe or the immediately adjacent regions. The early manifestations of aphasia are easily mistaken and thought by the patient's friends and family, and often enough by physicians, to be psychotic when indeed they are not. The difficulties are with language function and not with any fundamental disturbance in mood or mentation. When it comes to changes in such things as behavior, mood, memory, thinking and initiative these are unfortunately of little localizing value.

Headache does not always accompany a brain tumor and it is not a manifestation of increased intracranial pressure although it may be associated with it. About 80 per cent of persons with brain tumor but without increased intracranial pressure have headache due to distortion of some pain sensitive structure and under these circumstances the location of the headache can be helpful on occasion. Thus if it is in front and unilateral it usually indicates a supratentorial tumor on the side of the headache. Or if it is in the back of the head only, a subtentorial tumor is suggested. But if increased intracranial pressure exists as evidenced by papilledema the location of the headache is seldom helpful unless it can be established that the pain was initially in just one place prior to the development of papilledema. The headache associated with brain tumor is seldom of severe degree. If it does increase and become of impressive severity there is usually little time to waste because it means that there is a serious degree of displacement of the brain and that the margin of accommodation is dangerously reduced.

Convulsions when associated with tumors always indicate that the tumor lies above the tentorium; there are no fits resulting from tumors in the posterior fossa with the possible exception of their rare occurrence in a patient with an inherent tendency to convulsions who develops great intracranial pressure from a posterior fossa tumor. Patients with posterior fossa tumors may develop episodes of rigid hyperextension which are sometimes spoken of as cerebellar fits but which are really manifestations of a decerebrate state and have a serious implication. Fits usually with focal qualities and more often diurnal than nocturnal are a fairly common accompaniment of cerebral tumors. They occur in about 45 per cent of all supratentorial tumors but particularly with the more benign types of glioma (about 90 per cent in oligodendrogliomas) or with the meningiomas in which they have an incidence of about 65 per cent. The only manifestation for months or years of some of these benign tumors may be fits, which places a serious burden of responsibility upon the physician who accepts the care of the patient with convulsions of any type, particularly if the seizures have made their appearance for the first time in adulthood.

Evaluation of visual symptoms and of funduscopic, pupillary and extraocular signs are of very great importance and they do not necessarily require the help of an ophthalmologist, though he may be called upon to help. Reduction in visual acuity may result from involvement of the optic nerves or chiasm as from a pituitary adenoma in which case there is often primary optic atrophy. Or the acuity may be impaired by papilledema resulting from increased intracranial pressure. It is helpful to remember that only moderate loss of acuity occurs over a relatively long period in the presence of papilledema, whereas early and marked loss of acuity attends optic neuritis or papillitis from which it may otherwise be difficult to distinguish papilledema resulting from increased intracranial pressure. Perimetry may be particularly helpful and although careful testing on a tangent screen is desirable often much can be learned by confrontation testing with fingers during the initial physical examination. A defect in the visual field of one eye indicates involvement of the nerve on that side only. Bitemporal field defects, with rare exceptions, indicate a chiasmal lesion and homonymous field defects, as mentioned previously, invariably indicate direct involvement of contralateral visual pathways somewhere between the chiasm and the calcarine area of the occipital lobe.

Diplopia with duplication of objects on the horizontal line usually means palsy of one or both of the abducens nerves even though the weakness of the lateral rectus muscle cannot be identified on physical examination. Palsy of the abducens nerve is a common accompaniment of increased intracranial pressure and in the presence of papilledema has no localizing value. But diplopia characterized by oblique or vertical duplication implies palsy of the oculomotor nerve which should be further evidenced by an enlarged pupil and drooping eyelid on one side if not also by discernible defects in movements of the eye except in lateral deviation.

A unilaterally enlarged pupil due to oculomotor nerve involvement but without other loss of its function occurs particularly on the side of rapidly developing tumors of the temporal lobe causing shift of the brain stem and compression of the nerve.

Difficulty in upward gaze is pathognomonic of lesions of the quadrigeminal plate or adjacent region of the mid-brain, whereas defects in lateral movements of the eyes with preservation of vertical movements indicates a lesion slightly lower in the mid-brain. Brain stem tumors characteristically cause a variety of defects in conjugate movements of the eyes and also of other cranial nerves often long before there is involvement of long tracts or development of papilledema.

Nystagmus never results from a supratentorial tumor but is primarily a brain stem disturbance. It is sometimes linked with cerebellar tumors because they cause embarrassment of the nearby vestibular structures.

These are some of the more important ocular changes that provide tell-tale evidence of the presence and location of brain tumors:

The syndrome of the cerebello-pontile angle deserves special mention since it is encountered in about 8 per cent of brain tumors. The commonest tumor of the angle is the acoustic neurinoma while less common tumors are the meningioma and cholesteatoma. The characteristic sequence of symptoms is affection of cranial nerves from the fifth to the tenth or even to the twelfth nerve, ending after an elapse of considerable time with symptoms of pressure on the pons and medulla and the development of increased intracranial pressure from ventricular block. Symptoms of the acoustic neurinoma develop insidiously beginning usually with unilateral tinnitus and progressive deafness. There may be vertigo and instability of gait but rarely are there pronounced paroxysms of vertigo which occur in Meniere's disease and from which a differential diagnosis must be made. Loss of caloric response and total deafness is rare in Meniere's disease but common in acoustic tumors even before other signs develop. Eventually after many months, involvement of the adjacent trigeminal and facial nerves becomes evident, the former particularly identified by loss of corneal sensation even before other sensory loss in the face develops. The presence of the tumor should be recognized before the tumor has advanced to the stage of other cranial nerve palsies and ventricular block.

SPECIAL METHODS OF EXAMINATION

It would be a mistake to assume that the diagnosis of a brain tumor and evaluation of the many factors involved could do without diligent clinical study, yet without the aid of numerous adjuncts in diagnosis the factor of error would be formidable.

Roentgenograms of the skull yield positive information in at least 30 per cent of brain tumors. The more important changes to be looked for are as follows:

(1) Changes in the sella turcica. A "ballooned" and enlarged sella is diagnostic of an intrasellar tumor, usually a pituitary adenoma. Enlargement but with less characteristic rounded configuration results from long continued pressure from a dilated third ventricle. The dorsum sellae and posterior clinoids become atrophic after about three months of increased intracranial pressure.

(2) Calcifications. The pineal gland normally calcified in the majority of adults can often

be found to have been shifted from its normal position by a tumor in the cerebral hemispheres. About 10 per cent of tumors contain calcium; those most commonly showing calcification are craniopharyngioma, meningioma, oligodendroglioma, astrocytoma, angiomatous malformations and teratomas. But calcification can occur in any tumor and is seen even in the rapidly growing glioblastomas at times.

(3) Vascular changes. Meningiomas in particular are likely to be accompanied by large meningeal vessels on the same side and the enlarged grooves for these vessels are commonly identifiable.

(4) Changes in the skull. Meningiomas especially tend to invade the skull and often cause changes that permit accurate diagnosis. Characteristically, the meningiomas at the vertex, tuberculum sellae and olfactory groove cause both osteolytic and osteogenic changes. Meningiomas in the pterional region and sometimes along the sphenoid wing result in marked thickening and eburnation of the roof and lateral wall of the orbit. Certain of the foramina of the skull may show enlargement such as the internal auditory foramen in the presence of an acoustic neurinoma and of the optic foramen with a tumor of the optic nerve. Increased intracranial pressure will cause separation of the skull sutures and enlargement of the head in children, while in adults the convolutional markings are deepened.

Lumbar puncture cannot be performed without distinct risk in the presence of increased intracranial pressure. Any possible advantage is far outweighed by the danger of seriously increasing symptoms of the tumor or even of inducing respiratory failure. At least if there is papilledema present a lumbar puncture should be performed only as an immediate preliminary to a planned operation and there is never indication or justification for compressing the jugular veins to see how high the pressure will go! Of course in the absence of papilledema much may be learned from lumbar puncture.

(1) The pressure is read with a manometer while the patient lies in a horizontal relaxed position without anesthesia. A pressure higher than 200 mm. of water is evidence of pathologic increase in intracranial pressure. But an unrelaxed patient may show a falsely elevated pressure or occasionally a sudden block at the foramen magnum which follows the initial release of fluid may result in a falsely low pressure.

(2) The protein content of the fluid is elevated (above 40 mgm. per cent) in the majority but not all of brain tumors. It is most consistently high in basal meningiomas and acoustic neurinomas (100 to 200 mgm. per cent) though occasionally even in these it is normal.

(3) The cell count may be increased by round cells particularly in malignant gliomas that encroach on the ventricles or if necrosis occurs there may be a predominance of polymorphonuclear cells. Certain tumors, particularly metastatic melanomas, ependymomas, neuroblastomas and angiomatous malformations tend to bleed into the subarachnoid spaces causing xanthochromia together with fresh and crenated red cells in the fluid.

Electroencephalography provides a means of recording electrical potentials and on the basis that nervous function is related to potentials it is expected that the electroencephalogram will disclose the abnormal nervous activity caused by a tumor. Brain tumors themselves are electrically inactive but abnormal "slow waves" can be recorded from the brain in the proximity of a tumor. It has been the expressed hope of electroencephalographers in the past 15 years that the techniques could be perfected to the degree that the electroencephalogram could be heavily relied on not only to recognize the presence but the location and possibly even the pathologic characteristics of a brain tumor, but the hope has thus far not been fulfilled. Evaluation of the accuracy of localization of brain tumors by electroencephalography differs considerably and percentages vary from 50 to 75 per cent. No doubt results are influenced by techniques and the experience of the interpreter but tumors of the posterior fossa and deeply lying midline cerebral tumors do not produce a reliable pattern.

Cerebral gliomas near the surface are the most readily identified of the various tumors, but the low frequency "delta" rhythms seen with tumors may also be found in traumatic, vascular, inflammatory and degenerative conditions and in idiopathic epilepsy. One study (Kushman, Conde and Gibson, 1949) disclosed that in the electroencephalograms of 100 supratentorial tumors the accuracy in localization was good in 77 per cent, poor in 20 per cent and on the wrong side in 3 per cent.

While the electroencephalogram is easy and safe to perform, which cannot be said for some of the other methods of diagnosis, it falls short of providing reliable detection of the presence and location of a tumor. Unfortunately, many physicians do not fully appreciate this fact and are content to accept a negative electroencephalogram as final. But this is not to condemn the electroencephalogram, for used in conjunction with clinical and other methods of diagnosis it is a useful adjunct and is usually employed routinely in all major clinics today.

ANGIOGRAPHY of the intracranial vessels was introduced by Moniz in 1927. He established the basic normal appearances of the intracranial arterial and venous circulation and demonstrated many types of abnormality in aneurysms, tumors and thromboses. Improvements in the technique did not come till later but within the past ten years the method has come into wide use. There is still need for the discovery of a contrast medium that can be safely introduced into the vascular system. Diodrast (35 per cent solution) or some related iodinated preparation has proved relatively safe, but their use may be accompanied by systemic reactions or by evidence of irritation of blood vessel walls. In mild form the reactions may be only skin flushing, urticaria, nausea, vomiting and fever while more serious reactions include asthmatic attacks, vascular collapse and rarely death. Unfortunately the tests for sensitivity are not wholly accurate and are not routinely employed. The complications resulting from irritative effects on vessels include transient convulsions, palsies, aphasia and visual disturbances. Permanent palsies have occurred in some, probably due to thrombosis; precautionary attempts to avoid these reactions by cervical sympathetic block are of questionable value.

Although cerebral angiography usually proves to be an uncomplicated procedure it cannot be looked upon as a routine laboratory procedure or one to be performed on unhospitalized patients. If percutaneous injection of the carotid or vertebral arteries is unsuccessful an incision to expose the vessels is required. Pentothal anesthesia is preferred because at the time of the injection there is a momentary unpleasant, sometimes painful, sensation which may cause the patient to move and make roentgenography unsatisfactory. Pentothal also minimizes the risk of reaction from diodrast.

Cerebral angiography is most useful in identifying aneurysms or angiomatous malformations, but has great value also in the presence of brain tumors. The angiographic diagnosis of tumors is dependent upon the demonstration of displacement of the normal intracranial vascular pattern and of the outlines of newly formed vessels within the tumors.

Both lateral and antero-posterior roentgenograms are used and sometimes a seriogram of repeated exposures with short intervals during the 5-6 seconds that may be required for complete circulation of dye through the head.

The incidence of accuracy with angiography in the diagnosis of the presence and location of a supratentorial tumor is gratifyingly high though less than 90 per cent. The test is of little use for posterior fossa tumors. Identification of the nature of the tumor is not usually definite and the early hopes in this regard have not been realized. Exceptions exist with certain vascular meningiomas and the angiomatous malformations.

DURAL SINUS VENOGRAPHY is a variation in intracranial angiography. It employs direct injection of diodrast into the sagittal and occasionally other sinuses. The method has proved to be particularly useful in identifying sinus thrombosis which produces a clinical syndrome "pseudotumor cerebri." It is also valuable in demonstrating encroachment on the venous sinuses of adjacent tumors, particularly meningiomas.

RADIO-ACTIVE ISOTOPES have been employed in the identification of brain tumors for the last five years with variable success. Their use is based on the concept that a tumor alters the barrier between blood vessel wall and parenchyma of the brain so that a greater amount of the circulating isotope is held temporarily in neoplastic tissue than in normal brain tissue. The presence of the isotope is detected by a suitable counting device placed over the head thus identifying the presence and location of the tumor. The "tracer" substance that has proven of most practical use is activated Iodine$_{131}$ joined with human serum albumen (RIHSA) and the detection of the gamma radiations is accomplished by a scintillation counter.

The procedure is entirely harmless and less expensive than any of the other special testing devices, including roentgenograms of the skull. Its percentage of accuracy is about 75 per cent in positive identification of supratentorial tumors and there are virtually no "false positive" results. It is of no use in the detection of posterior fossa tumors but as a preliminary scanning method for supratentorial tumors it is proving to be superior to electroencephalography.

ULTRASONICS as a method of detecting brain tumors deserves only passing mention. The method so far has proven to be uncertain and impractical but investigative work is proceeding and may still show that ultrasonic impulses can be used to advantage in "sounding out" brain tumors.

Ventriculography and Encephalography by air injection are still the most reliable methods for identifying the presence and location of brain tumors. The latter method of spinal injection of air should never be used in the presence of increased intracranial pressure, which limits its usefulness. Pneumoventriculography though requiring trephination of the skull is looked upon as a minor procedure. It is not attended by any significant risk providing there is no delay in carrying out a craniotomy for removal of the tumor. In other words, it cannot be safely employed as one of the routine tests but only as an immediate preliminary to a planned operation.

The efficiency of the test is at least 90 per cent and more nearly 95 per cent. In some cases there is incomplete filling of the ventricles by the injected air, particularly on the side of a supratentorial tumor, but with experience in interpretation and by correlation with clinical findings the test is gratifyingly effective. Occasionally a normal or apparently normal ventriculogram occurs in the presence of an infiltrating glioma or a very small neoplasm (particularly metastatic) but in such cases the deficiency of the test is not usually serious since such lesions are not as likely to be benefited by surgery.

SURGICAL TREATMENT

It would be impossible to overestimate the value of the two great technical adjuncts to the technique of neurosurgery which became well established 20 years ago, namely strong suction and the electrosurgical unit for the control of bleeding during operation. But many refinements have been added. Considerable thought has been given to the cosmetic result of tumor operations and an unsightly wound is now an exception. Also a paralysis of the face following removal of cerebellar angle tumors is now avoided frequently by newer technique in preserving the facial nerve.

The Torkildsen operation of ventricular shunt has been highly useful in certain irremovable tumors such as the pinealomas. In some of these cases overcoming the increased intracranial pressure by the ventricular shunt has made it possible to treat and sometimes control by roentgenotherapy some of the more highly radiosensitive tumors in this region.

In many clinics local anesthesia which was tedious for both the surgeon and the patient has been replaced by intratracheal ether or intravenous pentothal. There is a distinct advantage in the safety against respiratory difficulty during the operation provided by the intratracheal tube, and by careful control of ether or pentothal consumption, operations can be continued for many hours without fear of difficulty.

The ready availability of blood for transfusion that now exists has simplified the control of shock from blood loss and has virtually done away with the need for multi-stage operations that formerly existed in certain tumors such as the large vascular meningiomas.

The development of fibrin foam and later of gelatin foam for hemostatic purposes has proved of incalculable value particularly in the control of general oozing from tumor beds, torn venous sinuses and dural surfaces.

The advent of antibiotics has been a godsend and the risk of infection and death from meningitis is now virtually a thing of the past. In this regard it can be added that a tuberculoma can now be removed without the almost inevitable sequence of meningitis and death, thanks to the advent of streptomycin.

The latest development, namely controlled hypotension during operation, gives promise of adding materially to the facility and safety of operations. There are several methods now in use and some are proving better than others. The method has the great value in minimizing blood loss. It also reduces the bulk of the brain which has an advantage in lowering intracranial tension and it has a complementary effect on the anesthesia so that less of the agent is required.

RADIATION THERAPY

Treatment of brain tumors by radiation before and after surgical removal has been one of the most discussed of the many problems relating to these tumors. Evidence that some surgically irremovable tumors are radiosensitive has resulted from time to time in recommendation of radiation therapy instead of surgery. But with certain exceptions there is not only no justification for such an attitude but there is actual danger since those tumors which are most sensitive are most likely to swell with the initial treatment and cause serious increase in neurologic deficit and even a threat to life. Furthermore verification of many tumors is uncertain without surgical exposure. It is another matter entirely to resect a tumor, perform a decompression and then safely employ radiation to the fullest in those in which the cell types are thought to be radiosensitive.

The two possible exceptions deserve special consideration. One of these is the pituitary adenoma and the other the pinealoma. The indication for surgery in pituitary adenomas is the evidence of intracranial extension and more particularly of visual loss. The chromophil adenomas that cause acromegaly rarely produce much if any visual loss and are very radiosensitive so that radiation alone is nearly always the treatment of choice. The chromophobe adenomas on the other hand are likely to have caused important if not serious visual loss by the time they come to recognition. At times the chromophobe adenoma is quite radiosensitive but the initial effect of treatment may be an increase in the size of the tumor and a worsening of vision which is not always reversible as the swelling of the tumor subsides. In others in which the tumor is less sensitive or insensitive to radiation there may be progressive and irreversible visual loss during the weeks in which the treatment is on trial. Certainly it should be understood that a pituitary adenoma should not be treated with radiation without careful visual examination at frequent intervals. It is the practice in most clinics to follow surgical removal by roentgenotherapy.

In the case of pinealoma, experience has shown that attempts at surgical removal have resulted in a formidable mortality whereas an impressive number have been benefited by radiation and possibly some have been cured. When the tumor has caused increased intracranial pressure it is necessary to perform a decompression before radiation can be safely given.

For infiltrating tumors of the type which recur after attempts at surgical removal postoperative radiation treatment is always to be considered. Certain of the gliomas such as medulloblastomas are highly radiosensitive and will virtually melt away with treatment for months or years though unfortunately they rarely if ever are cured. Other gliomas such as astrocytomas are regarded as having little if any sensitivity to radiation. However, the reaction of any given tumor is never wholly predictable and it is not unusual to encounter unquestionable retrogression of a tumor with radiation therapy when none was expected. For this reason it is common practice to institute therapy beginning about two weeks after operation in all patients whose tumors cannot be completely eradicated by surgery unless the patient is hopelessly crippled or has a short life expectancy.

Radiotherapists have improved their technique considerably in recent years by means of appropriate screening, control of the field, concentration of effect by cross-fire, and now are in the process of investigating high voltage (such as the betatron) and the efficacy of activating neutron capturing isotopes such as boron which tends to concentrate in tumors when injected into the systemic blood stream. Radium has never proven to be useful in the treatment of brain tumors but now the possibility of using radioactive isotopes (such as cobalt) which may prove to have advantages over radium is being investigated. Some of these newer methods though exciting in their possibilities have yet to prove their usefulness. Patients should not yet be urged to travel afar in search of the higher voltage machine or an atomic pile.

RESULTS OF TREATMENT

Many surveys have been made of the results of treatment of brain tumors. The over-all operative mortality for all types of tumor is between ten and twenty per cent. It is estimated that fully one-half of the brain tumors which come to operation are favorable for complete extirpation and of those who survive operation about two-thirds are returned to useful life. The favorable tumors consist of meningiomas, pituitary adenomas, acoustic neurinomas, gliomatous and hemangiomatous cysts of the cerebellum, angiomatous malformations (which are perhaps not true neoplasms), and a large group of uncommon tumors.

Though patients with metastatic tumors to the brain rarely survive as long as five years after metastasis is removed the temporary improvement and even rehabilitation of the patient often justify the effort. There is no incentive to remove a brain metastasis in a patient obviously riddled with tumor but it is unfair to deny operation to a patient in whom metastasis is uncertain or in whom it appears that excision of a single nodule may provide a period of useful survival.

The most discouraging results are with the cerebral gliomas and particularly the glioblastoma multiforme. In the latter the average survival after even the most radical surgical removal followed by radiation therapy is about one year; if survival occurs more than eighteen months after operation the chances are that the cell type was misinterpreted.

Some have recommended that no effort be made to remove a glioblastoma when it is encountered at operation and that no decompression be provided. This is a form of euthanasia which the majority of neurosurgeons do not condone. There is never justification for performing radical surgery on malignant tumors if serious crippling is certain to result but the gratifying restoration which often follows for a while after the subtotal removal of such a tumor is ample justification for its performance. A doctor can never take the responsibility for doing anything less than the best he can for any patient.

525 E. 68 St.

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The Surgical Management of Intrathoracic Lesions[*]

WILLARD H. PARSONS, M.D.
FRED J. HAMERNIK, M.D.
WILLIAM T. WILLIAMS, M.D.[†]

THERE are a great many reasons why chest surgery is so readily undertaken today. Among them are the remarkable advances in anesthesia in general and in endotracheal anesthesia in particular; the advent of chemotherapeutic and antibiotic agents; and the perfection of preoperative and postoperative care, particularly the liberal use of whole blood before, during, and after operation. The collaboration of competent and interested roentgenologists, bronchoscopists and pathologists with internists and surgeons has resulted in the more accurate diagnosis of intrathoracic diseases, especially neoplasms, and the surgeon, therefore, frequently has the opportunity to perform curative resections. The opportunities, of course, do not come as frequently as he would wish. In spite of the circumstances which have combined to reduce diagnostic error, the diagnosis is still made late, or missed altogether, in far too many tumors of the chest.

Although the Lutheran Hospital in Vicksburg has only a hundred beds, our experience with intrathoracic lesions has been surprisingly large. The 10 patients whose case histories are related in this paper were all encountered within a seven-month period and represent only a small proportion of the neoplasms and other thoracic conditions observed during this time. The cases are gathered together in this report because each of them illustrates some special point in the diagnosis or management of surgical lesions of the chest.

CASE HISTORIES

CASE I. A 70-year-old white woman was first seen in December 1949. For the past three weeks she had had a severe cold associated with a nasal discharge, a cough which was moderately productive, and frequent headaches. She had known for some time that she had advanced coronary disease, but she denied any other previous illness.

Her physical examination was essentially negative except for a temperature elevation of 102.6° F. Hematologic examination revealed a moderate secondary anemia. The sputum was negative for acid-fast bacilli, but cytologic studies were positive for malignant cells on two occasions.

Roentgenograms of the chest showed cardiac enlargement of about 10 per cent. Extending out from

[*] From the Vicksburg Clinic and Lutheran Hospital, Vicksburg, Mississippi.

[†] Former Fellow in Surgery, the Vicksburg Clinic, now serving in the Armed Forces.

the right hilar region, into the right lung field, was an area of increased density, which was thought to represent a tumor mass. There was no evidence of either atelectasis or pneumonia in the anteroposterior views. Planigrams showed the mass just described extending out from the horizontal fissure into the parenchyma of the lower lobe; it was again interpreted as a tumor. An enlargement of the mediastinal shadow was thought to represent an enlarged lymph node. Bronchoscopic studies revealed no evidence of fixation of the mediastinal structures or of the major right bronchus.

Exploration was undertaken on the presumptive diagnosis of bronchogenic carcinoma. Right pneumonectomy was easily performed, after establishment of preliminary pneumothorax. The lesion was reported as a bronchogenic carcinoma, without involvement of the mediastinal nodes. Recovery was uneventful and the patient is still living and well at the end of almost four years.

CASE 2. A 65-year-old white man was first seen January 26, 1950, with a three-year history of progressive weight loss, fatigue, and general debility. For the past two years he had had a cough, most troublesome at night, which had been almost nonproductive until 10 days before he entered the hospital. Then, for the first time, he coughed up a small amount of blood. He denied dyspnea. He had a long history of smoking cigarettes to excess.

Physical examination revealed limited expansion of the chest on both sides, with dullness of the percussion note over the right chest posteriorly from about the eighth rib downward. The area of dullness followed an oblique course across the posterior thorax roughly corresponding to the area of the right lower lobe. Breath sounds over this area were diminished but no definite rales were heard.

The sputum was negative for acid-fast bacilli. Bronchoscopic studies showed some displacements of the trachea to the right. The carina was not thickened. The right lower main stem bronchus was almost completely stenosed by a tumor which was well visualized and was grossly malignant. Biopsy was reported as bronchogenic carcinoma.

Roentgenograms of the chest showed a considerable amount of loculated fluid in the lower portion of the great fissure close to the cardiac border. There was haziness in the right lower lung field, but no definite evidence of atelectasis. The horizontal fissure was displaced downward and was somewhat thickened. The trachea was displaced to the right. At the lower end of the dorsal branch of the right main stem bronchus was a circular area of increased density. After a partial pneumothorax had been induced for diagnostic purposes, fluid could be seen in the right costophrenic sinus, and the middle and lower lobes were partially collapsed. The left lung field appeared normal.

Exploration of the chest revealed a huge tumor involving the lower and middle lobes, with caking of the hilum and fixation of the mediastinal nodes to the apex. Reaction was obviously impossible. Recovery was uneventful, but a severe constitutional reaction prevented the continuation of x-ray therapy, and the patient was discharged with a hopeless prognosis. He died exactly four months from the day of consultation.

CASE 3. A 47-year-old Negro man was first seen in January 1947, with a fibrosarcoma of the right breast. Because of the type of malignancy, with negative roentgenograms of the chest, surgery was limited to simple mastectomy. Three months later roentgenograms of the chest showed a definite homogenous increase in density in the right upper lung field. In October, nine months after operation, the chest films were entirely normal.

When the patient was next seen, January 23, 1950, roentgenograms showed a circular, sharply demarcated area of increased density in the right lower lung field. Roentgenograms of the spine, pelvis and skull were negative, and a complete workup revealed no other abnormalities.

The right chest was explored January 27, in the belief, which was confirmed at operation, that the abnormal area seen in the roentgenograms represented a single metastatic lesion from the mammary sarcoma. Exploration revealed a well demarcated tumor the size of a golf ball in the right lower lobe. Biopsy of several of the numerous nodes palpable about the hilum and extending into the mediastinum was reported benign. Pneumonectomy was accomplished without difficulty. The microscopic diagnosis was fibrosarcoma. After operation the patient had a moderate amount of intrathoracic bleeding, which was controlled by conservative measures. Later he developed an empyema, which was also controlled by conservative measures.

He was readmitted to the hospital April 24, 1950, and died a few days later of metastatic intra-abdominal malignancy. Necropsy was not permitted.

CASE 4. A 29-year-old Negro woman was first seen July 7, 1950, because roentgenograms of the chest, taken elsewhere six months earlier, had shown an abnormal area. She had no respiratory or other complaints. She denied smoking. Physical examination was completely negative. Sputum studies were negative for acid-fast bacilli but cytologic examination was reported as suspicious for malignant cells.

Roentgenograms of the chest showed a sharply circumscribed, circular area of increased density lateral to the left hilar region. On the left lateral view the abnormality was definitely localized in the upper lobe of the left lung.

Exploration of the left chest July 12 revealed a hard tumor in the upper lobe adjacent to, but not involving, the hilum. In the mediastinum were a few enlarged, soft mediastinal nodes. Frozen section revealed no evidence of malignancy. Left upper lobectomy was carried out without difficulty.

The postoperative course was uneventful, and the patient is well, and gainfully employed, three and one-half years later.

When the paraffin sections of this specimen were first examined the tissue was reported as lymphosarcoma. In view of the extreme rarity of this neoplasm, the slides were reviewed by a number of pathologists and the diagnosis was changed to bronchogenic carcinoma.

CASE 5. A 39-year-old Negro man was first seen December 12, 1949. Routine roentgenograms of the chest had been reported abnormal a year earlier, but in the absence of symptoms the patient declined to seek consultation. He smoked about one can of tobacco weekly. Physical examination in December 1949 revealed a firm mass 2.5 cm. in diameter in the right breast just beneath the nipple and a similar, smaller mass beneath the left nipple. With this exception physical examination was entirely negative. Laboratory studies, including cytologic studies of the sputum, were also negative.

Roentgenograms of the chest revealed a circular area of increased density in the left lung field adjacent to the hilum. Planigrams demonstrated the lesion clearly.

September 14 the left chest was opened, on the diagnosis of bronchogenic carcinoma. A hard mass, which was clinically malignant, was found at the hilum. It apparently involved the main stem bronchus going to the upper lobe. The left lung was removed without difficulty. The laboratory diagnosis was chondroma, and the mass in the left breast, which was removed later, was also reported as benign.

The postoperative course was uneventful, and the patient is well at the end of almost four years.

CASE 6. A 32-year-old Negro man was first seen January 21, 1950, because a routine chest examination three months earlier had revealed an abnormality of the right lung field. He was completely asymptomatic. He smoked about one package of cigarettes daily.

Physical examination was negative, and the only abnormality found on laboratory examination was a moderate anemia. Roentgenograms of the chest revealed a semicircular mass overlying the upper right lung posteriorly. Stereoscopic examination indicated that it was extrapleural and located in the soft tissues along the medial border of the scapula.

The chest was explored January 27, after the secondary anemia had been corrected. Elevation of the scapula revealed no evidence of a tumor mass between it and the thoracic cage. When an intracostal incision was made between the fourth and fifth ribs and the pleura was opened, a soft cystic tumor, about the size of a hen's egg, was found in the pleural space adjacent to the fifth rib in the posterior axillary line. Clinically and histologically the tumor was a lipoma.

The patient recovered uneventfully and is in good health four years after operation.

CASE 7. A 35-year-old white woman was first seen in June, 1950. She stated that 10 years earlier (elsewhere) she had undergone gastric surgery for supposed tuberculosis of the stomach; what was done she did not know. In 1945 she was under treatment for pulmonary tuberculosis. Three months before she entered the Lutheran Hospital she had been surveyed elsewhere, and both bronchoscopic and cytologic studies had been reported positive for malignancy of the lung. She had formerly smoked cigarettes to excess.

Physical examination was entirely negative, and repeated examinations of the sputum revealed neither tubercle bacilli nor malignant cells. Roentgenograms revealed an old healed tuberculosis of the left apex. In the right apex was a circular, sharply defined lesion which had the appearance of a tuberculoma. There was some calcification of the lesion, but no evidence of destruction in the apex of either lung.

The right chest was explored June 9 and tight upper lobectomy was done for a well encapsulated, hard tumor of the upper lobe. Clinically and histologically the lesion was a tuberculoma.

The patient recovered uneventfully and is living and well three and one-half years after operation.

CASE 8. A 30-year-old Negro woman was first seen in August, 1944. For the past month she had had a severe productive cough, with fever. Physical examination was negative except for numerous rales in both lungs. Roentgenograms of the chest revealed a rounded mass of soft-tissue density, about 4 by 4 cm., in the right chest. The presumptive diagnosis was congenital cyst of the lung. Surgery was advised and refused.

The patient re-entered the hospital March 23, 1950. For the previous three years she had had a slight cough, which had become much worse about four months ago. Over this same period the cough, previously non-productive, had become productive, and considerable amounts of foul-smelling sputum were brought up each morning. Six days before admission, the patient stated, she felt as if something in her chest had burst. Immediately afterward she coughed up about two cupfuls of very foul sputum. Pain in the chest had been present for about four months.

Physical examination showed many rales throughout the right chest. The sputum was negative for both acid-fast bacilli and malignant cells. Roentgenograms showed a large cavity with a fluid level in the periphery of the right upper lobe.

The patient failed to improve under postural drainage and antibiotic therapy, and the chest was opened April 3, on the diagnosis of lung cyst. A soft cystic mass was found occupying the periphery and major portion of the upper lobe, which was adherent to the middle lobe. Both the upper and the middle lobe were removed. The laboratory report was nonspecific inflammatory cyst.

The patient recovered uneventfully and is in good health more than three and one-half years after operation.

CASE 9. A 45-year-old white man was first seen February 27, 1950, complaining of a chronic cough for the past several years. Three months before admission it had become more severe, and for the first time considerable amounts of foul-smelling sputum began to be expectorated. Neither dyspnea nor hemoptysis had been present, but over the three-month period he had lost 20 pounds. He smoked a pack of cigarettes daily.

Physical examination was negative except for an occasional fine rale over the left upper lobe anteriorly. Spuhum studies were negative for both acid-fast bacilli and malignant cells. Bronchoscopic examination was also negative.

Roentgenograms showed a circular area of increased density in the right hilar region. Extending out from the hilum on this side was a wedge-shaped area of increased density, which almost reached the periphery. On the right lateral view this area extended from the hilar region anteriorly and superiorly into the right upper lobe.

Exploration was undertaken March 10, on the presumptive diagnosis of carcinoma of the right lung. The lung was densely adherent to the entire pleura. A hard mass in the middle lobe, extending down to the periphery of the lung, was regarded as carcinoma, and pneumonectomy was performed. The microscopic diagnosis was chronic suppurative pneumonitis, with no evidence of malignancy.

The patient recovered uneventfully and is living and well more than three and one-half years after operation.

CASE 10. An 11-year-old white boy was first seen January 10, 1949, with an abscess of the upper lobe of the left lung, after a tonsillectomy which had been performed elsewhere.

He improved under postural drainage and antibiotic therapy but did not completely recover. Left thoracotomy was therefore done March 21. The upper lobe of the lung and the lingula were necrotic and the site of a huge pyogenic abscess. The upper lobe was adherent to the pleura. The histologic diagnosis was pulmonary abscess with suppurative pneumonitis.

Recovery was uneventful and the patient is well four years after operation.

COMMENT

The first four cases in this series are illustrations of different aspects of malignant lesions of the chest. The contrast between the first and second cases is particularly striking:

The *first* patient had had symptoms for only three weeks when she was first seen, and they suggested nothing more than a minor upper respiratory infection, of the variety common during the winter months. Symptoms of this kind are usually ignored by the patient, while the physician, if he should be consulted for them, is inclined to forget that carcinoma of the lung is an insidious disease, which may masquerade as an entirely innocuous condition. It was a happy chance that brought this patient to the hospital. The surgical resident who saw this patient, because unhappy experience had made him suspicious, conducted a full examination, including sputum studies and roentgenograms. Both were conclusive. The malignant tumor was readily resected and the patient is living, with no trace of metastases or recurrence, at the end of four years.

The *second* patient ignored his symptoms for three years. When he was first seen, the lesion was inoperable and he lived only a few months after exploratory thoracotomy. In this case the diagnosis was made by roentgenograms, bronchoscopy and biopsy. In our general experience, cytologic studies of the sputum are more accurate than bronchoscopic studies, one obvious reason being that tumors of the lung are often so situated that they cannot be visualized by bronchoscopy. If the tumor can be visualized, as in this case, and a biopsy can be taken, the diagnosis is promptly established, but unfortunately also, as in this case, when these conditions are met, the disease is likely to be far advanced and inoperable.

The *third* patient had a metastatic lesion, secondary to a primary fibrosarcoma of the breast. The lesion in the chest was apparently single, the primary malignancy was of low grade, there was no other demonstrable metastasis, and resection was regarded as both indicated and justified. The lot of a patient with a metastatic pulmonary lesion can have but one outcome if secondary surgery is not done. Even if he lives a long time, the end is inevitable. Today, the risk of pulmonary resection of a metastatic lesion is considerably less, all things considered, than the risk of leaving the lesion alone. This point of view is no longer regarded as radical. On the other hand, the cases for secondary surgery must be selected with great care if the procedure is not to fall into disrepute. The unhappy outcome in this case is to be regretted, but under similar circumstances, the same policy would be followed.

Two excellent reports on pulmonary resection for metastatic lesions appeared in 1950. The first, by Seiler and his associates[1] from the Mayo Clinic, concerned 62 cases, 52 collected from the literature and 10 observed at the Clinic. The first recorded operation was done in 1898, in Germany. The procedures employed included partial and complete lobectomy, segmental resection, pneumonectomy, multiple excisions in two cases, and bilateral partial lobectomy in one case. The surgical mortality was 10 per cent. At the time of the report 27 of the 62 patients were still living and well, though some follow-up periods were too short to justify any conclusions, and the prognosis in some survivors was poor. The periods of survival ranged from one month to 216 months (18 years). In 11 cases the patients survived three years or more. Two patients survived for more than 10 years each.

In a footnote it was stated that six additional operations for metastatic malignancy of the chest had been performed at the Mayo Clinic since the original report, and that four of the six patients were living and well from four to 18 months after operation.

A few months after the report of Seiler and his associates, Monor[2] reviewed a five-year experience at the University of Michigan Hospital. Over this period 314 patients presented clinical, pathologic and radiologic criteria sufficient to warrant a diagnosis of pulmonary metastasis from primary malignant tumors. In all but four cases, however, extrapulmonary metastases were already present and ineradicable, or eventually developed, or the pulmonary lesions were so situated that they could not be completely resected. The metastatic lesions were resected in two of the four cases and the patients were still living and well at the end, respectively, of seven and fourteen years.

In the *fourth* case, as has already been pointed out, the original diagnosis of lymphosarcoma was later changed to round cell carcinoma. Had this diagnosis been returned on frozen section, pneumonectomy rather than lobectomy would have been done. This is our practice and preference, in spite of the good results reported from Massachusetts General Hospital, where lobectomy is frequently employed in place of pneumonectomy. In this case the patient was seen early and lobectomy has apparently been sufficient to rid her of her malignant disease, since at the end of three and one-half years she is still perfectly well.

In the *fifth* case, although roentgenologic examination suggested a diagnosis of carcinoma, sputum studies were negative. At the operating table the appearance of the tumor and the presence of enlarged, hard lymph nodes further supported the belief that we were dealing with a carcinoma, and pneumonectomy was performed. The histologic diagnosis was chondroma, but the patient is well rid of a lesion which is sometimes the precursor of a chondrosarcoma.

In the *sixth* case the lesion proved to be a lipoma and the patient would probably have lived out her normal life span without ill effects from it if the diagnosis could have been established preoperatively. With present techniques this is not possible. Such tumors must therefore be resected and examined histologically, exactly as is necessary with abdominal masses whose origin and histology are not clear.

In the *seventh* case the preoperative diagnosis was not difficult. The lesion had the roentgenologic characteristics of a tuberculoma and the previous history pointed to that diagnosis, though acid-fast bacilli were not demonstrable in the sputum on repeated examinations. At operation the consistency seemed hard, but histologic examination proved the lesion to be an immature or soft tuberculoma. There is no question that all such lesions, regardless of their grade of maturity, should be removed. It is well known that they are all potentially dangerous. Even after years of innocent existence they may break down or erode into one of the smaller bronchi, thus producing an active and positive focus for the dissemination of the disease. Furthermore, as Mahon and Forsee[3] have emphasized, one cannot be certain that the lesion is a tuberculoma and not a neoplasm until it is diagnosed in the laboratory. Although most round lesions in the parenchyma are tuberculomas, some are not. Over the same period in which these observers encountered and removed 48 tuberculomas, they also removed seven solid round lesions, of which one was a sarcoma, one a metastasis from a primary renal carcinoma, and two peripheral bronchogenic carcinomas.

The *eighth*, *ninth* and *tenth* patients in this series all had supportive inflammatory lesions, one an infected cyst, one a suppurative pneumonitis, and one a pyogenic abscess. There is considerably less reason for surgical intervention in inflammatory lesions of the chest than there once was, because postural drainage, together with the sulfonamides and antibiotics, so often effects a cure. Not infrequently, however, one is confronted with a lesion which for one reason or another does not respond to these measures, and segmental resection, lobectomy or pneumonectomy must be done, according to the indications, before the suppurative process causes irreparable damage. Another reason for thoractomy is the impossibility of distinguishing benign from malignant lesions by present diagnostic techniques.

The *tenth* patient, an 11-year-old boy, was unlikely to have any condition except a lung abscess. He was operated on because he did not respond to therapy. The *ninth* patient, a 45-year-old man, was in quite a different category; a lung abscess in a man of this age is more likely to originate in a malignant process than in any other etiology, and the operation was regarded as entirely justified even though the preoperative diagnosis of carcinoma proved incorrect. The *eighth* patient, who had cystic disease of the lung, refused surgery when she was first seen and had to be operated on later, after the cyst had become infected; operation was correspondingly more difficult for the surgeon and more dangerous for her.

One or two other points should be mentioned in the discussion of these cases. One is the great value of the routine chest x-ray when it is carefully read, correctly interpreted, and properly implemented. Three of the patients in this series (cases 4, 5 and 6) reached us because these conditions had been met. One patient (case 4) had a malignant growth which was early and readily resectable. Her prognosis, at the end of three and one-half years of good health, is excellent. One patient (case 5) had a chondroma which she is better without. These lesions may later become sarcomatous. The other patient (case 6) had a benign lipoma but there was no way of establishing that fact except by exploration. Our best hope of detecting early, operable carcinoma of the lung is the continued use of mass x-ray surveys, with the proper follow-up of abnormal films and with prompt exploration in all cases in which malignant disease cannot be promptly and positively excluded.

The other point to be made is the safety of chest surgery today. All of these patients survived surgery, though two of them did not survive their disease. With a single exception all of them had smooth and uncomplicated recoveries, which is chiefly evidence of the efficiency of modern preoperative and postoperative care. In view of the safety of thoracic surgery, there is no justification for failing to resort to prompt exploration when there is the slightest suspicion that a chest lesion may be malignant. A precise diagnosis is not necessary.

It is significant that operation in the first case in this series was undertaken as a calculated risk. The patient had had coronary disease for many years. Under the care of a competent internist she not only survived operation, she has also survived both her malignant and her cardiac disease for more than three and one-half years. Such patients furnish the best possible illustration of what modern thoracic surgery can accomplish.

SUMMARY

The safety of thoracic surgery today warrants prompt resort to it whenever surgical lesions of the chest are encountered. Ten cases are reported in which this plan was followed. The conditions which the patients presented are briefly commented on and it is emphasized again that survival in malignant disease depends upon prompt diagnosis and exploration, even if a precise diagnosis cannot be made.

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Treatment of Tuberculosis*

RAY H. BIGGS, M.D.
Sanatorium, Miss.

The treatment of tuberculosis is rest!

As of today, no new method of treatment has replaced the well-substantiated procedure of diet, mental and physical rest. The sensational antimicrobial agents do not rid the body of mycobacterium tuberculosis. The even more sensational excision of infected lung tissue does not remove all the foci from the body. The nature of the disease is such that only physical and mental relaxation can cause the increase in resistance necessary for the complete cure of tuberculosis. However, with the modern attack on the virulence of the organism by antibacterial agents, with increased resistance of the host, due to rest, as well as removal of infected lung tissue by excision, modern miracles are performed in making useful citizens of many lung derelicts.

The importance of rest cannot be stressed enough. Naturally, the extent of the disease determines the length of time a person should rest. In attempting to reduce this time to a minimum, various mechanical measures have been tried. The earliest attempts were by the use of sand bags. From this to modern methods, the phrenic nerve crush through the gamut of various operative procedures—temporary collapse by air, oil, etc., permanent collapse with plastic material (lucite, etc.), and removal of ribs in the well-known thoracoplasty—all enjoyed popularity at one time, but in any collapse measure the physiology of the lung is disturbed, also good lung tissue has to be sacrificed in order to effect cavity closure. Many patients are cured of the disease only to become respiratory cripples. It seems a shame to find fault with the old standby, the thoracoplasty, but the procedure is gradually losing out to resection. Pneumoperitoneum, a comparative newcomer, has proved to be an excellent collapse procedure. Used with antimicrobial agents, astonishing results in regard to permanent cavity closure, particularly bilateral cavitation, are frequently noted. Physiological function is disturbed less with pneumoperitoneum than with any other mechanical collapse measure.

When streptomycin was discovered, it aroused the interest of chest physicians, chest surgeons, a few practitioners of internal medicine, and TB patients. When isoniazid was so very dramatically announced, it aroused the interest of everyone. After hundreds of years using thousands of drugs, antimicrobial therapy is assuming the most important role in present-day treatment. So much so that every month there is a voluminous mass of published papers. It is difficult to keep up to date, in fact it would be impossible if it were not for a report published as often as necessary in the *American Review of Tuberculosis*, entitled, "Current Status in the Treatment of Tuberculosis." This is a report of the committee on therapy of the American Trudeau Society.

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*Presented before the Section on Medicine of the eighty-fifth annual session of the Mississippi State Medical Association, Biloxi, Miss., May 10-13, 1953.

Streptomycin was discovered by Waksman and reported by Schaz, Bugie and Waksman as bacteriocidal to tubercle bacilli in high concentrations and bacteriostatic in low[1]. The antibiotic was given clinical trial by Hinsaw, Feldman and Pefutze in 1946[2]. Since then thousands of papers have been published, all agreeing that streptomycin is of great benefit in the treatment of TB, however, it was disappointing in that miracles did not happen. Also, it was soon found that recommended dosage caused a toxic action on the eighth nerve, resulting in vestibular damage and/or deafness[3],[4]. Toxicity was found to be directly proportional to the size of the daily dose. Not only toxicity, but another problem[5] became apparent, bacterial resistance!

Lehman first used para-aminosalicylic acid in the treatment of tuberculosis and found it mildly inhibitory to tubercle bacilli[6]. It naturally followed that the two drugs be used together. It was found that the inhibitory powers of both drugs were enhanced, probably by synergistic action, but of more importance, it was found that P.A.S. delayed or prevented the emergence of resistant bacilli[7].

The attempt to avoid toxicity, and to prevent emergence of resistant bacilli has resulted in the present dose schedule[8]. Clinical trial is of course continuing, the optimum dosage may or may not have been reached. Certainly, the newest antimicrobial agent, isoniazid, will have a profound effect on treatment. Significant findings are reported daily; tomorrow this whole paper may be wrong.

Isoniazid (isonicotinic acid hydrazide) was announced in the daily newspapers in February, 1952. Isoniazid was rediscovered by German workers, Squibb research team and Hoffman LaRoch research team, at about the same time and unknown to the other groups. After comparing notes the first scientific report was in April, 1952[9],[10].

After the newspaper publicity, there was quite a clamor for the drug. Each of several drug houses allotted enough drug to treat five cases, giving practically every sanatorium and other groups enough for 15 to 20 cases. Strings were attached to the gift—the drug was to be used on those cases that would not live until the drug was released for sale. This resulted in a somewhat unusual series of cases. All were at death's door. Very shortly the drug was released for sale, and actually, the reports now are on larger series. However, it is interesting to follow our 20 cases, due to the peculiar selection. All 20 cases were far advanced with multiple cavitation, all sputa positive, all resistant to streptomycin. Each received 4 mg. per kilo per day. Laboratory control indicated no toxicity. Clinical symptoms of toxicity were dizziness and nervousness. Two cases were moribund, receiving oxygen, and the families were gathered for the exit. These two cases are now up and on some exercise. Nineteen of the 20 cases are still living 14 months later. The usual indications of resistant bacteria were noted in three to four months. All cases but one converted sputum to negative on concentrate smear. All but one reverted back to positive in two or three months. After five months of isoniazid therapy alone, the 19 cases were put on streptomycin and isoniazid, or streptomycin, P.A.S., and isoniazid. This means that the survival of these cases cannot be attributed to isoniazid, however, isoniazid helped, which of course is a mild statement. One of the cases has had a pneumonectomy and is clinically well. Another is scheduled for a lobectomy. One was discharged as arrested. All this happened after streptomycin was reinstituted. Nevertheless, it is astonishing that 19 of the 20 very far advanced cases are still living.

At the Sanatorium we report an average of four deaths per month at the monthly staff meeting. From July 1952, to December 1952, no deaths were reported. In a nine-month period, July 1952 to April 1953, only four deaths have been reported. Prof. Etienne Bernard in the Bulletin of the *International Union Against Tuberculosis*, Vol. XXIII No. I, states that: "In France the rate of tuberculosis mortality which for the first quarter of 1952 had hardly shown any change in comparison with the first quarter of 1951, has dropped by 20 per cent in the second quarter, and by more than 40 per cent in the third quarter." He attributed this to isoniazid.

The question of bacterial resistance seems to creep into any discussion of antimicrobial therapy. Very little is known about drug resistance, except that it does occur when one drug is given alone. It seems to occur more frequently when the drug is given in large doses in short periods of time. It occurs more frequently in those cases having granulomatous or thick-walled cavitary disease. It is assumed that as these lesions are notoriously lacking in blood supply, the concentration of the drug is bacteriostatic rather than bacteriocidal. Bacterial resistance is easily demonstrated in vitro, but in vivo resistant organisms are difficult to demonstrate, and, if found, will seldom grow on culture or infected animals. The addition of a second tuberculostatic agent greatly reduces the chance of emerging resistant strains. It has been stated that it is mathematically improbable that bacterial mutants would develop double resistant powers at the same time. With the addition of a third agent, it would appear that chances should not only be improbable, but impossible. Clinically, it is assumed that when a patient fails to improve, or, shows regression while on antimicrobial therapy, the invading bacilli are resistant. The preceding sentences contradict each other. It may be impossible to get resistance with all three agents, nevertheless, a few patients regress, so something other than resistance must be wrong.

Mackaness and Smith[11] have a very significant article in the March 1953 *American Review of Tuberculosis.* Working experimentally on the action of streptomycin alone, isoniazid alone, and with streptomycin and isoniazid in combination, intracellular and extracellular bacilli, these factors are considered responsible for the failure of chemotherapy: 1) resistance, which is overcome by combining two agents; 2) whether the agent reaches the bacilli. Streptomycin seems to be stopped at the cell membranes. Isoniazid, it was found, could penetrate the cell membrane and kill all intracellular bacilli. However, it is still questionable whether streptomycin or isoniazid can reach the bacilli in old necrotic lesions. 3) the metabolic state of the bacilli. Neither streptomycin nor isoniazid are effective on resting bacilli. Used together, in these experiments 98.8 per cent of the bacteria were killed. It would appear that in combining streptomycin and isoniazid all these factors are overcome, except the presence of the agent in necrotic tissue. However, Buckley and coworkers[12] using radioactive isoniazid found that this drug not only enters into all tissue and tissue juices, spinal and pleural fluid, but very readily enters old necrotic lesions, and is in bacteriocidal concentrations three to five hours after a single dose. This group has brought up the interesting questions as to what tuberculostatic agent should be used with isoniazid; one that would also penetrate these areas preventing bacterial resistance.

At the present time there are two very potent anti-TB agents, and several mild inhibitory drugs. One drug or a combination of drugs will kill tubercle bacilli. At certain stages in the pathogenesis of tuberculosis a complete sterilization can be accomplished. At other stages patients are kept alive that should have been dead. Going back to our series of 20, three out of twenty with arrested disease is a very good percentage compared to inevitable death in 4 to 6 months. Sixteen still have active disease, but they are also still living, taking up bed space for six months longer than they would have before isoniazid. Others have been added. Most are happy and show no indications of an early demise. When will these patients die? Should drug therapy be withheld in such cases? Who is to decide? What if they live as long as antimicrobial therapy is continued? Should it be continued?

TB experts are asking each other these questions, and wondering what will be the outcome of all this. Such wonderful results should decrease the necessity for more TB beds, but does it? With the old chronics living to a ripe old age more beds seem necessary. But, if we expect this result in old chronics, we certainly can expect the drugs to cure the early lesions completely. Therefore, theoretically, after several years we have early, easily cured cases and old chronics, no inbetween cases. When the old chronics die of old age we will have no use for TB beds at all. This, of course, is theory, but the necessity for more beds is a fact, even if temporary. The alternative is for you as practicing physicians to treat these cases in the home, these and other cases which cannot be admitted to the Sanatorium.

Treatment of tuberculosis in the home has always been unsatisfactory. The patient doesn't feel any progress, the physician observes very slow progress, and both become disgusted. But now, with bed rest and antimicrobial therapy, subjective and objective improvements are very real from the start, making both feel that something is being accomplished.

I, personally, advocate giving every case of active tuberculosis, pulmonary or extrapulmonary, antimicrobial therapy. I see no reason to wait or put it off. What would we be waiting for? The only question in my mind is what combination of drugs to use. Certainly at least two drugs should be given. Isoniazid and P.A.S. are just as good as streptomycin and P.A.S.—possibly better.

Streptomycin and isoniazid make a very effective combination. However, at the Sanatorium we prefer to save one major agent for surgery, but if the first combination does not give satisfactory results, then we use everything we have. At times all antimicrobial drugs are necessary to get the patient in shape for a resection.

The selection of cases for home treatment will of course create quite a problem. The ideal program would be the admission of every case of active TB to the Sanatorium, the case evaluated, necessary treatment planned very carefully, then discharged to receive this treatment at home, returning to the Sanatorium for any change in therapy or when ready for resection, if necessary. I cannot put down in black and white which case should be treated at home, and which case at the Sanatorium. It would seem that at the present time the bed situation would be the major factor. Another factor is that for several years the trend in morbidity of tuberculosis is to older white males. These older white men develop what could be called chronic fibroid tuberculosis. In fact, the incidence in this group is so high that we can never hope to admit them all, even for a few months to evaluate the case.

As of today white females can be admitted in two weeks. Young white males in a month or less, middle age white males in three to four months, depending on the number of young males on the waiting list. Older white males probably cannot be admitted at all. Young negroes, male or female, may be admitted in six months; older negroes one to two years, if at all. According to the above situation, it would seem that middle age, and elderly white males, and all negroes would be candidates for home therapy.

In the event that you decide to institute antimicrobial therapy at home, the following is a brief resumé of the agents used:

STREPTOMYCIN

Dose: One gram twice a week, I. M.

Duration: The duration of treatment has not been mentioned in this paper. When it was found that intermittent doses of streptomycin with P.A.S. in combination prevented bacterial resistance it naturally followed that the regime be carried out as long as it was doing good. Results have shown the value of long term therapy, and the agent should be continued six months after the disease has become inactive. Speaking generally minimal disease 6 to 8 months. More advanced, 9 to 12 to 24 months to five years, or even for life. There should be no rest periods. Personally, I think these agents should be continued even in the presence of resistant organisms.

There are no contraindications, except the presence of a marked allergy to the antibiotic, or extremely poor kidney function. All through this paper, I have said streptomycin. There is no difference in action or results with streptomycin and dihydrostreptomycin. Both may be toxic to the eighth nerve. Streptomycin affects the vestibular branch and dihydrostreptomycin the auditory branch.

A person can learn to compensate for a disturbance in equilibrium, but deafness does not improve. Therefore, streptomycin is indicated for long term therapy. However, if the patient is allergic to streptomycin, dihydrostreptomycin can be tried. Reports have come in on the use of ½ gram streptomycin and ½ gram dihydrostreptomycin. Up until May 1, the price of this combination was too high in comparison with the regular antibiotics. The combined drugs are supposed very materially to cut down toxic action and allergy.

P. A. S.

Dosage: Up to 10 or 12 grams daily in divided doses. This drug has very little inhibitory effect. In the foreign literature they report better results, but the dosage runs up to 25 grams a day. We have found that patients cannot tolerate much more than 12 grams and may not tolerate that much. Toxic symptoms are nausea, vomiting and diarrhea. If severe, the drug should be stopped, then started in small doses, increasing gradually to tolerance. Patients may be allergic to P.A.S., with severe serum sickness, which of course contraindicates the drug. P.A.S. comes in various forms: ½ gram tablets, enteric coated tablets, coated granules, effervescent tablets, and sodium salt. If one is not tolerated another can be tried.

Duration: Same as streptomycin.

We have given P.A.S. alone. Some patients swear that it cuts down on cough and expectoration.

ISONIAZID

The isopropyl derivative is more effective, but also more toxic. A discussion of iproniazid would complicate matters at the present time.

Dose—Isoniazid—4 mg. per kilo per day.

Generally we give 150 mg. to a small person, 200 mg. to a normal medium and 300 to a large person. This may be divided in two or three doses daily. Larger doses have been found to give better results, but cause more toxic manifestations. Intermittent dosage has been tried but as yet is not generally accepted. Common toxic manifestations are, dizziness, and nervousness; possibly twitching or soreness of extremities, which indicate the site of toxicity is in the central nervous system.

Our patients have had very little toxic manifestation, but reports have been made on quite a number of toxic symptoms, all pertaining to the C.N.S. There is one reported case of death when given to an epileptic. At the Sanatorium our only contraindication is epilepsy. In the presence of kidney disease, a reduced dose is necessary, and evidence of accumulation watched for. Severe kidney dysfunction would be a contraindication. Our 20 cases for five months had every kind of test possible in our laboratory. Nothing startling happened. None of the body functions seemed disturbed. Duration: Same as streptomycin.

Foot note: Terramycin counteracts the action of isoniazid. Dosage of agents is the same when given in combination. It is extremely essential that at least two be given in combination. If only one is tolerated, or available, that one should *not* be given at all. If the physician does not think he can follow a case indefinitely, or if you think the patient will not cooperate indefinitely, then don't start antimicrobial therapy. Remember bed rest is still essential. The beneficial results in long term therapy may actually be due to bed rest.

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DISCUSSION

Dr. Eugene M. Murphey, III (Tupelo) — It would be superfluous to attempt to add anything to this very interesting and comprehensive presentation, but I would like to re-emphasize one or two points which I consider especially important.

In present-day medical research the development of newer and more promising antibiotic and chemical agents for the treatment of tuberculosis has led to a widespread belief among patients and the general public that a new panacea is available. This has even led in some instances to a reluctance of patients to continue following conventional methods of treatment or in some cases even to refusal of some new patients to accept sanatorium care. I was therefore happy to hear Dr. Biggs' opening statement that the treatment of tuberculosis is REST. The new treatment agents and methods are then only aids to treatment and not an end in themselves.

I was intensely interested in Dr. Biggs' statements regarding home treatment. Since I have been in practice I have repeatedly been faced with this problem of what to do with the tuberculosis patient who is ineligible for sanatorium care or who can not be admitted for weeks or months because of insufficient bed space. The situation is often discouraging both to physician and patient, and it is small wonder that the patient's progress is not actually impeded by his agitation over the fact that "nothing is being done." Now with the advent of the more simplified procedure of pneumoperitoneum along with the more effective therapeutic drugs there is a great deal we at home can do in addition to imposing the important but passive regimen of rest.

I should like to encourage your consideration of pneumoperitoneum as a relatively safe and practical procedure available to anyone who is interested in treating tuberculosis patients at home. Naturally it must be used in selected cases but I believe I am right in stating that it is rapidly superceding pneumothorax in collapse therapy. No expensive equipment is required, fluoroscopic control is not absolutely necessary, complications are rare and the procedure can be completed in about fifteen minutes per patient. Surely then, there is no longer any excuse for our throwing up our hands in despair when we find a tuberculosis patient who cannot soon or ever enter the Sanatorium for treatment.

Dr. R. E. Schwartz (Hattiesburg) — Dr. Biggs has just presented you the up-to-date information on the three major antimicrobial drugs. His statement as to the effect of the use of these on the death rate at the Sanatorium will bear repeating, I quote: "At the Sanatorium we report an average of four deaths per month at the monthly staff meeting. From July 1952 to December 1952, no deaths were reported. In a nine-month period, July 1952 to April 1953, only four deaths have been reported." That, in my opinion, tends to prove that these drugs, namely isoniazid, P.A.S., and streptomycin are true wonder drugs for the treatment of tuberculosis, when wisely and properly used.

The question of when are they wisely and properly used has been studied and is still being studied by different designated groups over the country. Our own Sanatorium staff has been and still is one of the groups so designated. Dr. Biggs has very ably expressed to you his opinion of these drugs in various combinations based on these studies.

I wish to give you my personal observations in the use of these drugs. I have directed the use of isoniazid, P.A.S., and streptomycin in the treatment of more than fifty cases of tuberculosis. First streptomycin alone, then P.A.S. alone and in combination with streptomycin, and last isoniazid, alone, and in combination with, P.A.S. and in many instances with streptomycin. The combination of all three drugs has been more successful than any drug alone. The most convenient home management is the use of isoniazid and P.A.S. The most dramatic result I obtained was that of a young negro woman, a far advanced case, with bilateral cavities, who had had streptomycin and P.A.S. therapy and continued to get worse. When isoniazid became available she started using it. In sixty days she had gained twenty-six pounds, and is one of the few that showed x-ray changes of improvement, from isoniazid. She has continued to show steady improvement on isoniazid alone. I have had but seven cases to die after receiving the combination of P.A.S. and streptomycin, several are not showing much improvement, and one is gradually getting worse. I have five colored cases that are either arrested or healed, five that are continuing to show improvement. Each has used or is using two of the drugs in combination. About twenty of my white patients are getting or have had pneumoperitoneum or pneumothorax along with the drugs. Most of them have had Sanatorium treatment.

There is no question but what all patients with tuberculosis should spend time in a sanatorium, for educational purposes as well as for therapy. They need to be taught how to rest and the value of same. They also will see that the "wonder drugs are not so wonderful" where proper rest is not observed. They will also see that proper rest will prevent many cases going to surgery.

I agree with Dr. Biggs, that all cases of tuberculosis should receive these antimicrobial drugs, if they are properly supervised. It is physically impossible to hospitalize all cases of tuberculosis; hence the proper use of these drugs at home will save many lives.

The main problems in home therapy are: 1) financing the treatment. This is being done by local organizations and groups, in many places; 2) getting the patient to rest properly and sufficiently. They get to feeling so much better, gain weight early in the treatment, then they are hard to hold down, especially if they have not had previous sanatorium treatment; 3) some improve so much that they get the idea that they will get well without going to the Sanatorium, and refuse when they do get the opportunity to go, which might be fatal in most instances.

It is my understanding that Dr. Boswell and Dr. Biggs have prepared and will have available soon, printed information for state physicians on how to use isoniazid, P.A.S., and streptomycin at home on patients who can not get into the Sanatorium. I hope that most of you will take advantage of this information and use it. If you will, I believe that we will soon get our death rate down to a minimum, and will prevent many patients having to have major surgery.

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Fifty-Year Club Biographica

JOHN SWEYN McINTOSH

John Sweyn McIntosh, son of Dr. John and Elizabeth Evans McIntosh, was born July 19, 1875, in Shubuta, Mississippi.

He attended school in Ellisville, Mississippi, and later attended A and M College (Mississippi State College). In 1904, he received his medical degree from Tulane University. He also did postgraduate study at the New Orleans Polyclinic.

Doctor McIntosh first practiced at Logtown and later moved to Mount Olive.

Doctor McIntosh served two years in the Army —one in France during World War I and one in a field hospital as Medical Corps captain.

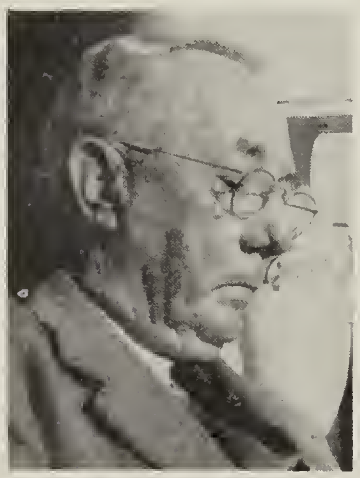
In 1925, he located in Jackson and ten years prior to retirement served as anesthesiologist at the Baptist Hospital in Jackson.

In July, 1953, the State Medical Association honored Doctor McIntosh with lifetime membership in the Fifty-Year Club.

For many years Doctor McIntosh served his fellowman faithfully and well.

Doctor McIntosh resides at 4535 Meadow Ridge Drive, Jackson.

JAMES HERMAN FOX



On August 4, 1880, James Herman Fox, son of James I. and Addie Hebron Fox, was born at Bovina, Mississippi.

He attended the public schools of Warren County and St. Thomas Hall Military Academy at Holly Springs. On April 29, 1903, he received his medical degree from Memphis Hospital Medical College (University of Tennessee). Following graduation, he served a one-year internship at the United States Marine Hospital, Memphis, Tennessee. He began the practice of medicine at Newman.

In 1907, Doctor Fox located in Vicksburg and while there did postgraduate study at Jefferson Medical College, Philadelphia, Pennsylvania.

In 1910, he was appointed to the staff of the State Hospital for the Insane, Jackson, and in 1914 became assistant superintendent. He served one year in the Army as captain in the Medical Corps. After returning from the Army in 1919, he entered private practice in Jackson. In 1924, he was appointed medical rating specialist for the Veterans Administration and this same year served as captain, Medical Corps, Mississippi National Guard. Again, Doctor Fox entered the Army and in 1941 was made a lieutenant colonel. In 1942, he became chief medical examiner, Induction Station, Camp Shelby. Doctor Fox returned to the Veterans Administration, Jackson, in 1945.

On September 28, 1953, Doctor Fox was awarded the Certificate of Merit from the University of Tennessee, fifty years following graduation.

The State Medical Association on January 5, 1954, honored him with lifetime membership in the Fifty-Year Club of the State Medical Association.

Throughout the years, Doctor Fox has served faithfully and well and has contributed to Mississippi's medical tradition.

Still in active practice, Doctor Fox is with the Veterans Administration, Jackson.

ANNUAL FIFTY-YEAR CLUB LUNCHEON

The Fifty-Year Club luncheon, given each year during the state convention, is scheduled for Tuesday at noon, May 11, at the Robert E. Lee Hotel, Dr. J. K. Avent of Grenada, host. Every member of the club is urged to make plans to attend this happy event.

ACKNOWLEDGEMENT

Appreciation is expressed to Dr. Felix J. Underwood for the cuts and biographical data submitted for this little section of the journal. It is a labor of love to share in recognition of the service and inspiration this noble band has rendered. Blessings upon them.

What is a cynic? A man who knows the price of everything and the value of nothing. — *Wilde*

BOOK SECTION

INSTALLMENT 10

Atlas of Rush Pin Technics

LESLIE V. RUSH, M.D.

Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

This is the tenth of a series of monthly installments to be published in *The Mississippi Doctor* during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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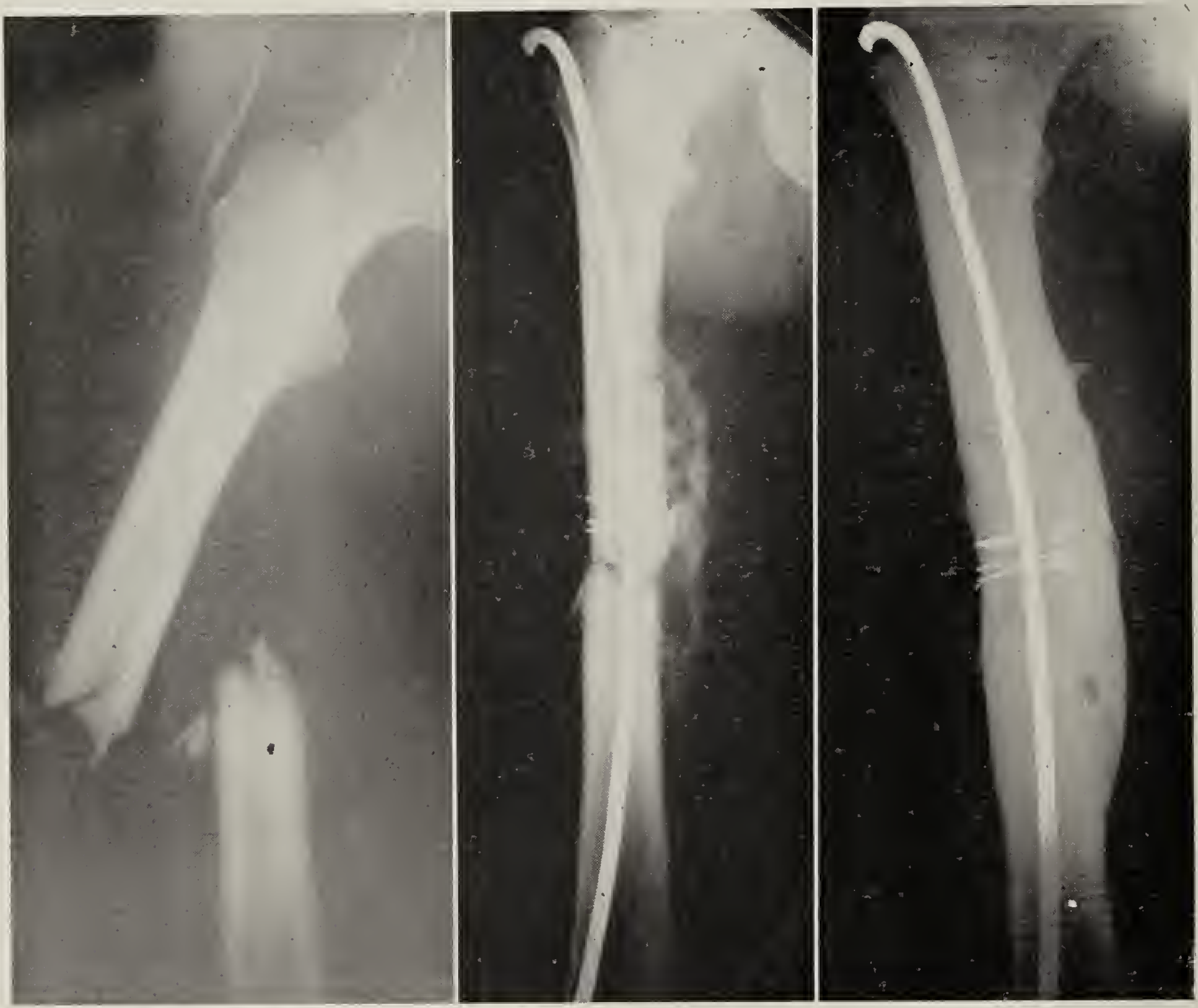


First use of curved pin in the femoral shaft was accidental. Fracture was transverse with inconspicuous comminuted fragment. Pinning and wiring done by semi-open reduction. Fixation was astoundingly stable and healing rapid.

18

CASE-GRAMS: FEMUR

The use of the curved one-fourth inch pin for the femoral shaft is now almost routine. It is most strongly indicated when the medullary cavity is large.

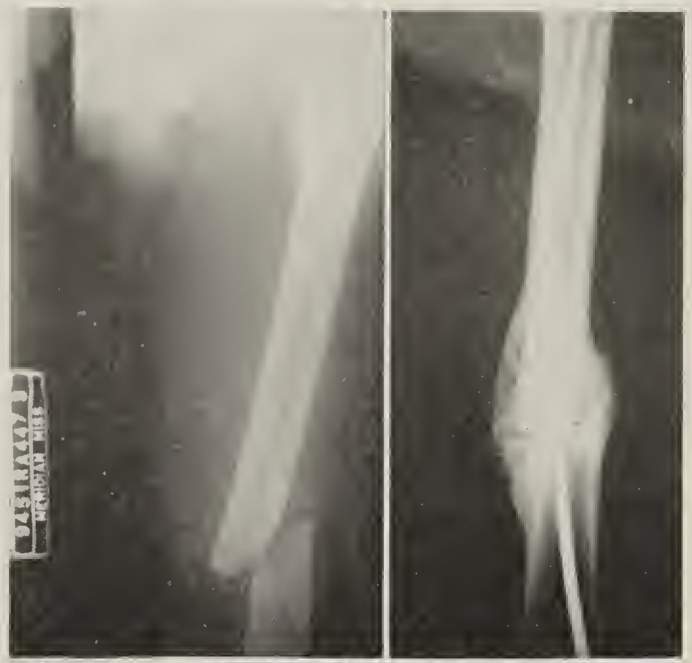
In the early cases a straight pin was driven downward from a point of insertion above and medial to the great trochanter. In some instances the straight pin did not give stable fixation of the lower fragment and if the medullary canal was large, rocking and rotation could occur.

In the above case the pin was introduced through a stab wound and by accident the pin entered the side of the trochanter. The upper fragment acted as a bender (the three rollers' principle), and when the pin was driven completely home, the stability of fixation was astounding.

It was interesting to observe in the check-up x-ray films that the markedly curved pin resulted in perfectly straight alignment. Thus was born the format for future shaft fracture operations.

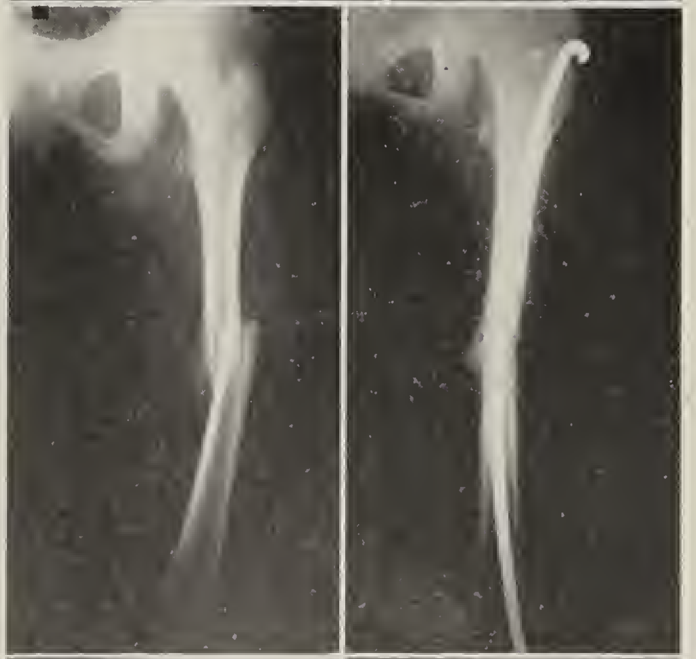
Large Cavity — Curved Pin

Middle-aged adult. Note the enormous size of the marrow cavity, especially that of the lower fragment. The pin was preshaped into curve to secure point pressure. A straight pin would not have given stability.



Curved Pin, Straight Bone

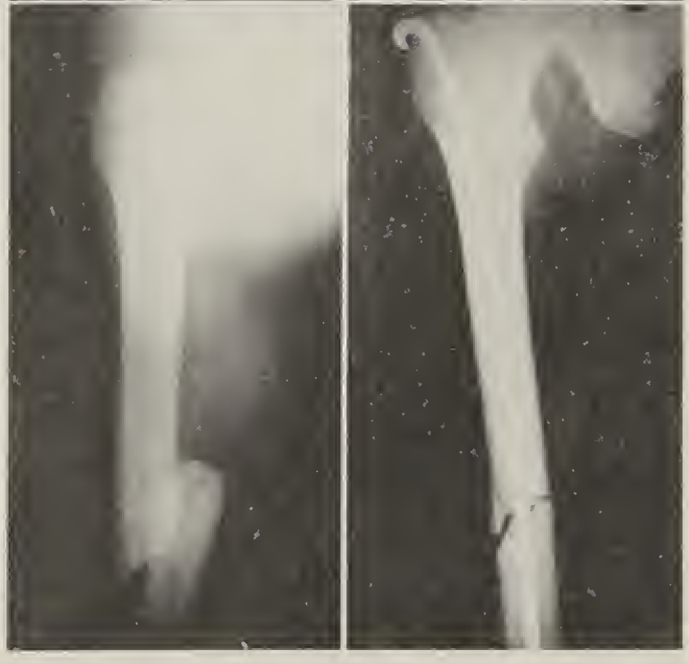
Adolescent girl. Small isthmus, large trumpet-shaped lower fragment. Precurved pin gave straight bone, excellent fixation.

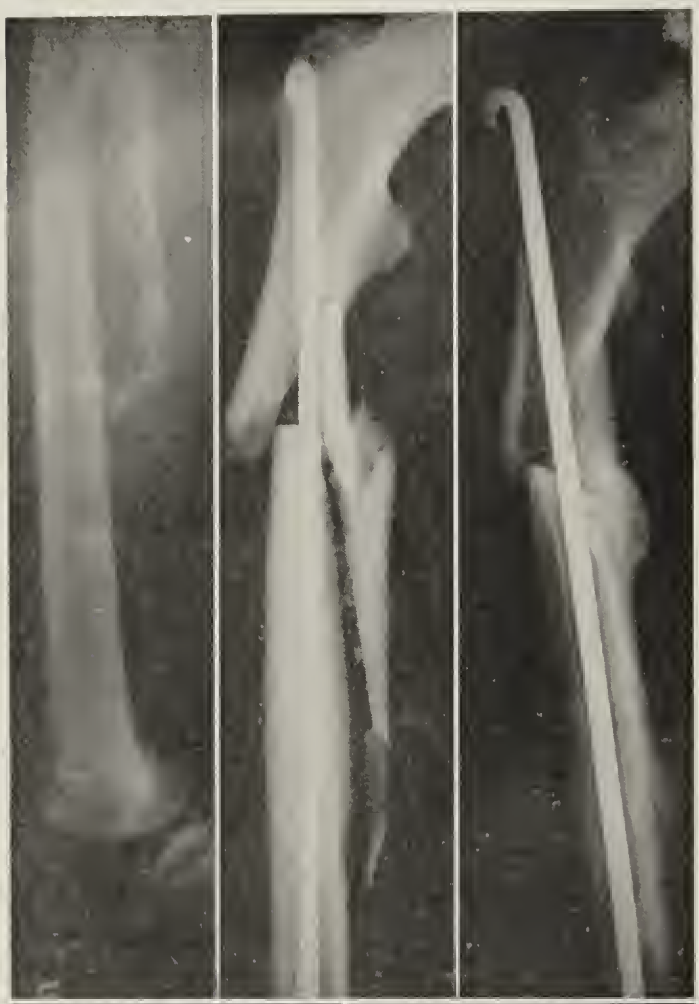


Small Marrow Canal

Boy, age 18. Curved pin would not drive. The cancellous bone was firm—it can be unbelievably hard at this age—and the marrow canal was too small to admit the curved pin.

Straight pin passed uneventfully and gave good fixation because the fracture surface was irregular. Head of pin was curved to prevent migration into bone from pressure.



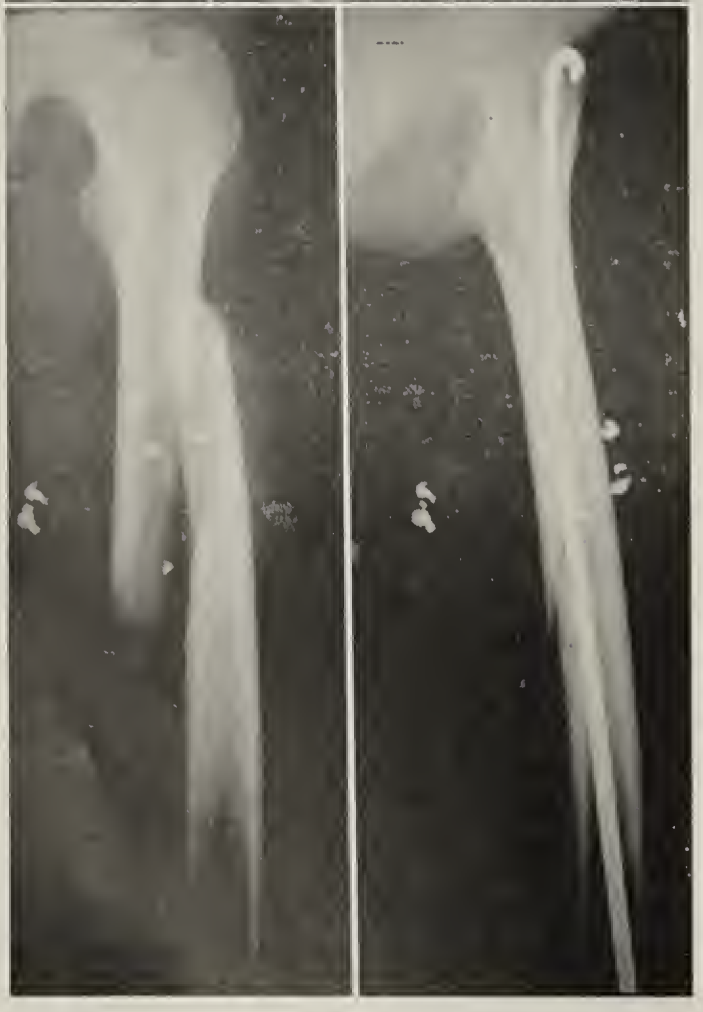


Short Fragment - Angulation

Male, age 18. Good healing with full weight-bearing at four months. No traction or external fixation. Note incomplete comminuted fragment on upper main fragment displaced medially by pressure of pin. This loss of the third point of pressure permitted angulation.

Circular wires would have prevented deformity and have given better approximation. They were not used because of this patient's border-line age. In children wires are not indicated. In an adult wires would have been used.

In this case the pin would have been better introduced above and medial to the great trochanter. This would have permitted less angulation. Curving the proximal end of the pin might have lessened angulation.



Long Fragment - No Angulation

Male, age 22. Spiral fracture from bullet wound. Semi-open reduction using curved pin. Complete reconstruction and stability without circular wires.

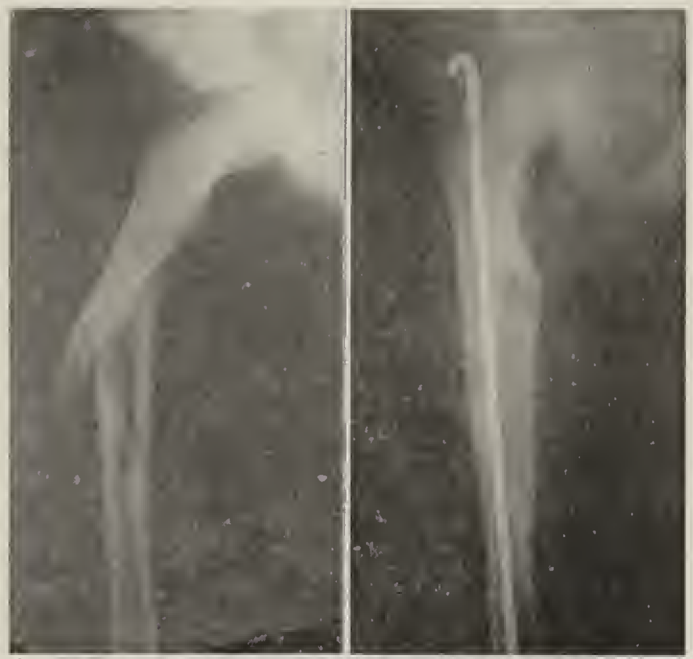
Note the direction of the obliquity. On the proximal fragment note that the long spike is on the medial aspect. This provides a broad surface against which the shaft of the pin can exert pressure. This gives stable fixation of the upper fragment. Contrast this with the case above.

The curved pin is exerting two-point pressure in the lower fragment and acting as a lever to force the fracture surfaces together.

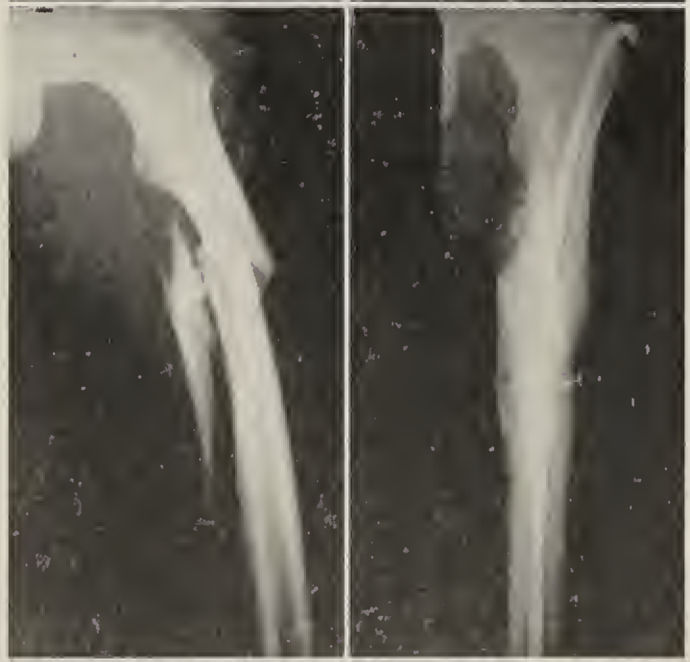
Comminuted Fractures

INFLUENCE OF AGE

Male, age 13. Cancellous bone is firm at this age. Pin was introduced medial to trochanter to avoid injury to epiphysis. Circular wires were *not* used. Proximal and distal fragments made contact to prevent shortening. Butterfly fragment ignored.

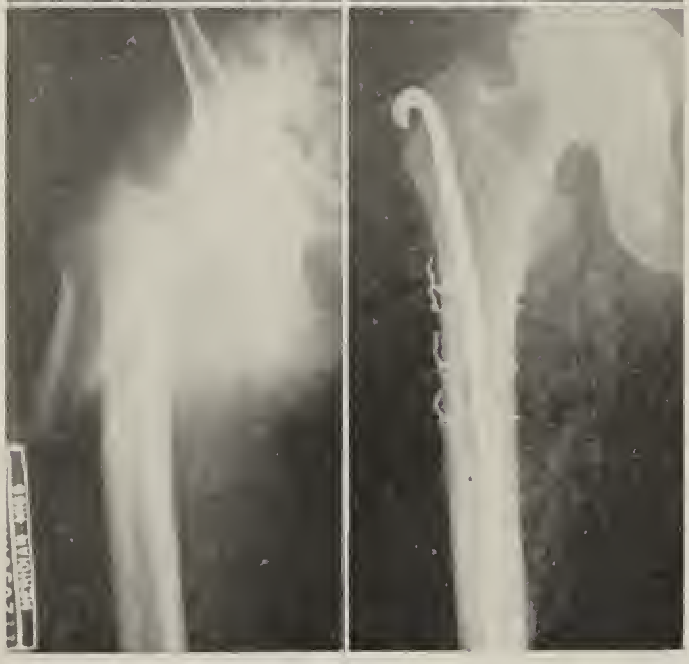


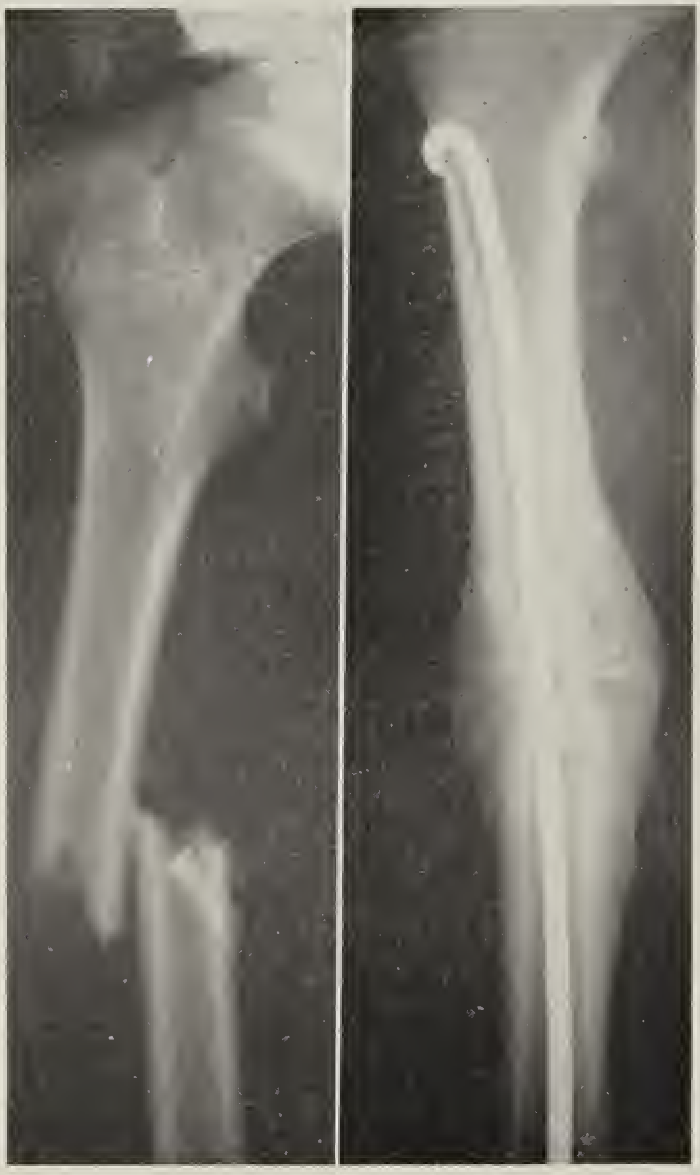
Male, age 24. Curved pin, semi-open reduction. Proximal fragment long enough for three-point pressure and cancellous bone extremely firm at this age. Circular wire coapted butterfly fragment to give better two-point pressure to stabilize lower fragment.



Male, age 65. Note obliquity of fracture line. The long spike of the upper fragment is on the lateral wall. The fragment is short on the medial wall which precludes good three-point pressure in this fragment.

The cancellous bone of the trochanter has little substance at this age. The circular wires in this case were essential.





Children

In small children the pin can be introduced from the side of the bone through an oblique opening. The pin three-sixteenths inch diameter (Rack 2) is used because it is flexible and will not crowd the marrow cavity.

The case at the upper left demonstrates a good application of this method.

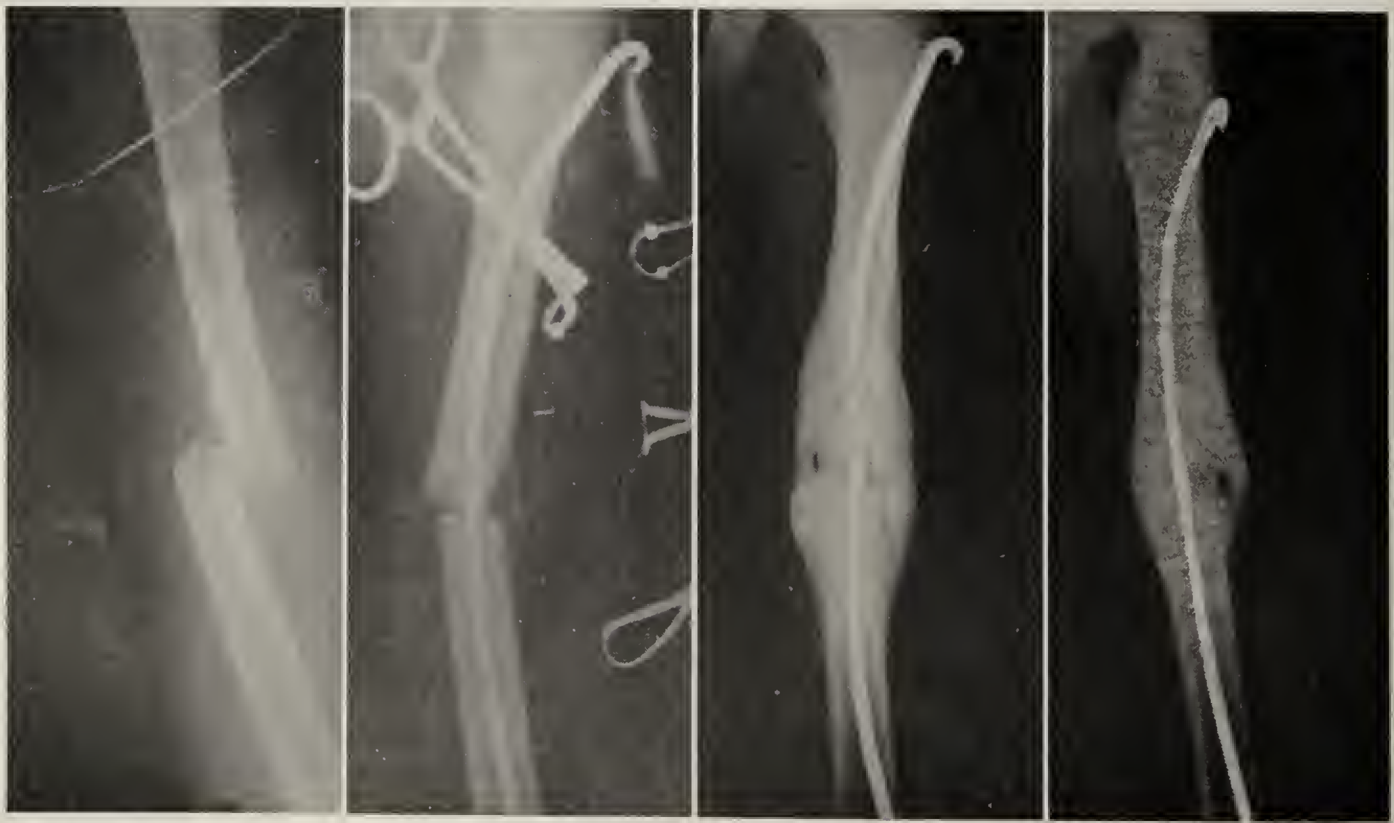
This application gives good fixation because the pin becomes curved to give stable fixation of both fragments.

It has the disadvantage that it is difficult to make the opening in the bone with sufficient obliquity. This is especially true if the great trochanter projects out shelf-like.

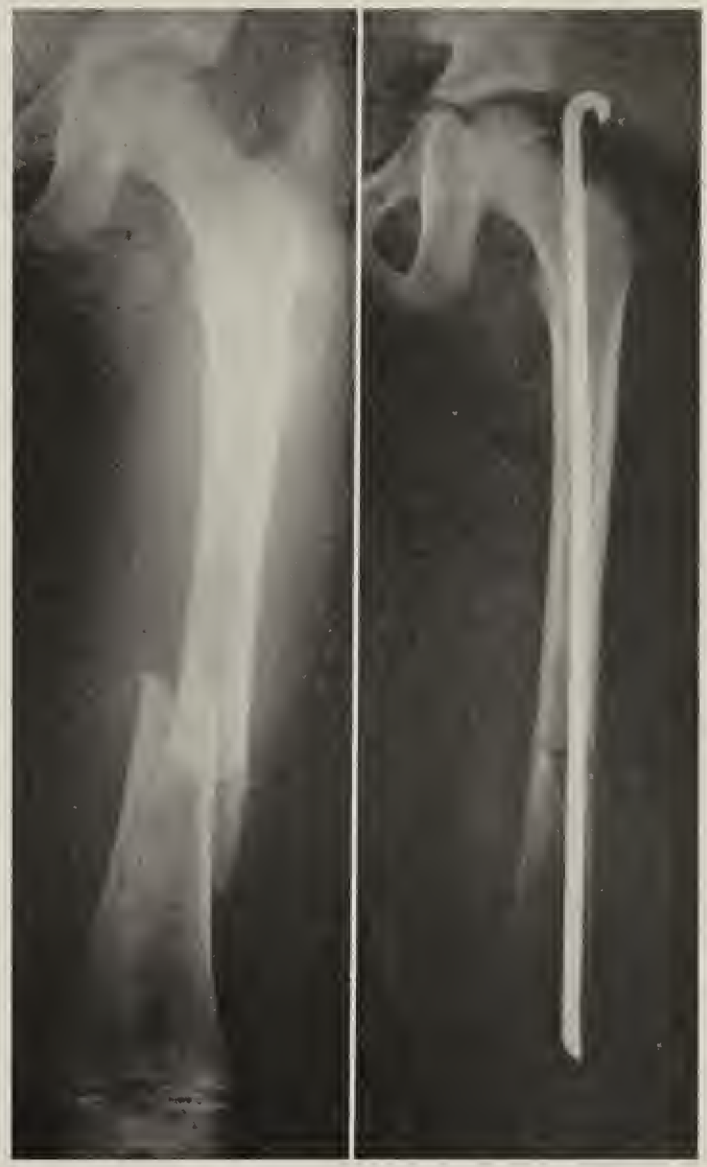
In the case below because the opening was too transverse, the pin bent within the bone to such degree that it produced an angulation which had to be forcibly corrected.

The simplest method is to insert a curved or straight pin above and medial to the trochanter.

In the case shown (upper right, opposite page), the fracture had occurred through a bone cyst. A straight pin was satisfactory here because the fracture was a stair-step type which had no tendency to rotate. The firm cancellous bone of the lower fragment prevented rocking.



Adolescents

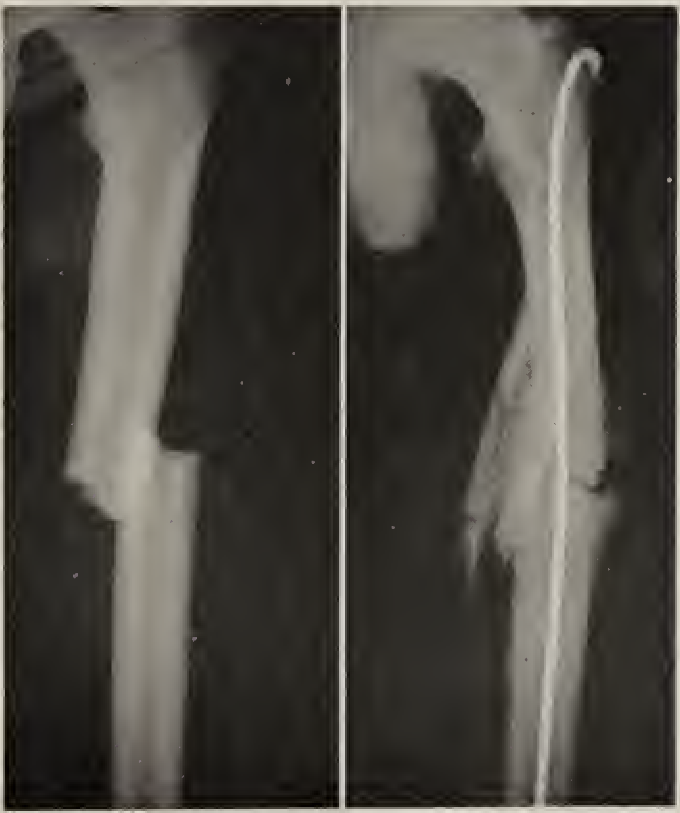


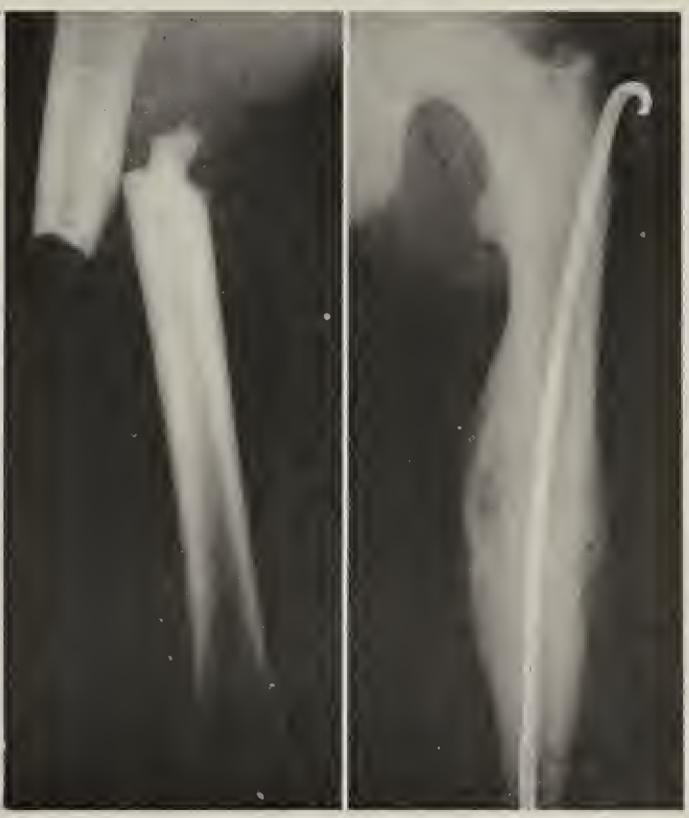
Here it is usually best to use the curved one-fourth inch pin (Rack 1). The medullary cavity is usually large enough to receive a pin of this size. If there is doubt, a straight pin should be driven. Driving may be difficult at this age because of the dense cancellous bone.

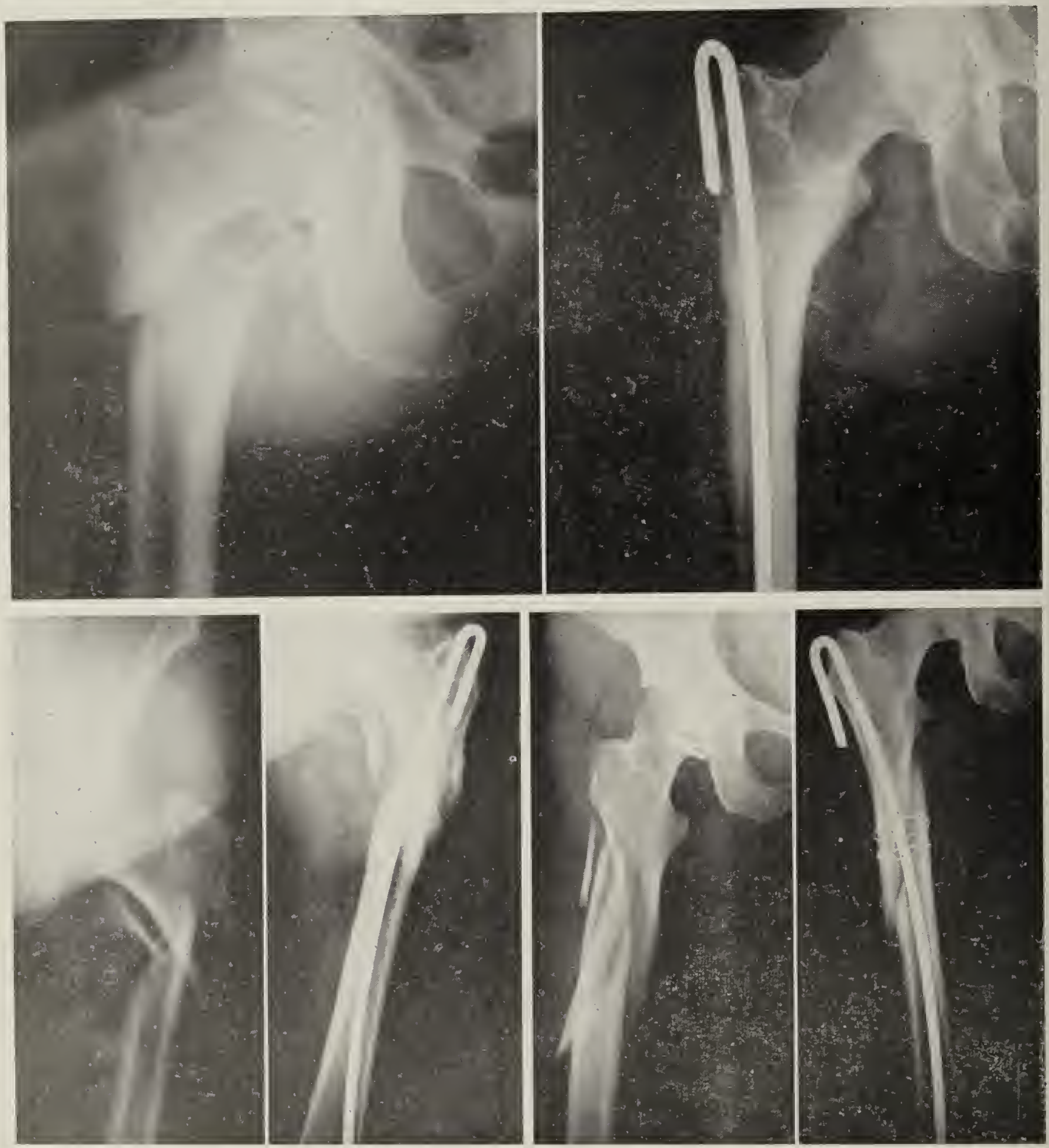
The three-sixteenths inch pin (Rack 2) is not rigid enough to resist the powerful muscle pull in the thigh at this age.

In the case (lower left) the pin began to bend within the bone to allow angulation, making it necessary to apply traction. Note the niche in the lateral position of the peripheral callous from rocking.

The accompanying case (lower right) shows the proper application of the one-fourth inch pin in a similar case. At the present time we have seen no instances of bending of the quarter-inch pin within a bone.





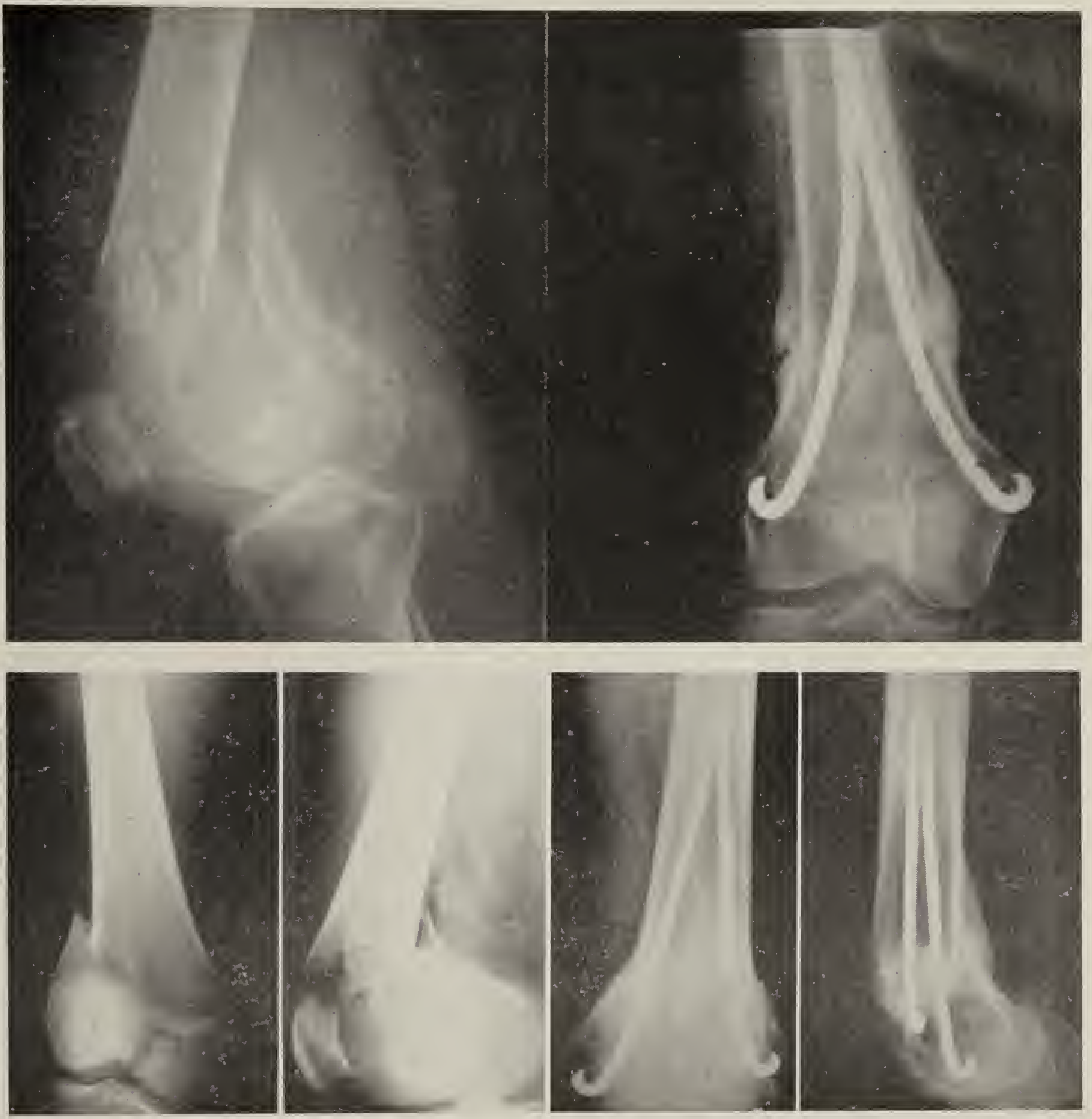


Subtrochanteric Area

TOP: When the trochanter is of firm bone substance, the "special" femur pin can be used for a quick and simple operation. By sandwiching the outer cortex, it can secure a stable purchase on the upper fragment and prevent angulation and rotation.

LOWER LEFT: Angulation and insecure fixation occurs if the trochanteric bone is comminuted or friable. In the aged this is to be expected. The regular hip nail with anchor shaft plate is much more dependable in cases of this type.

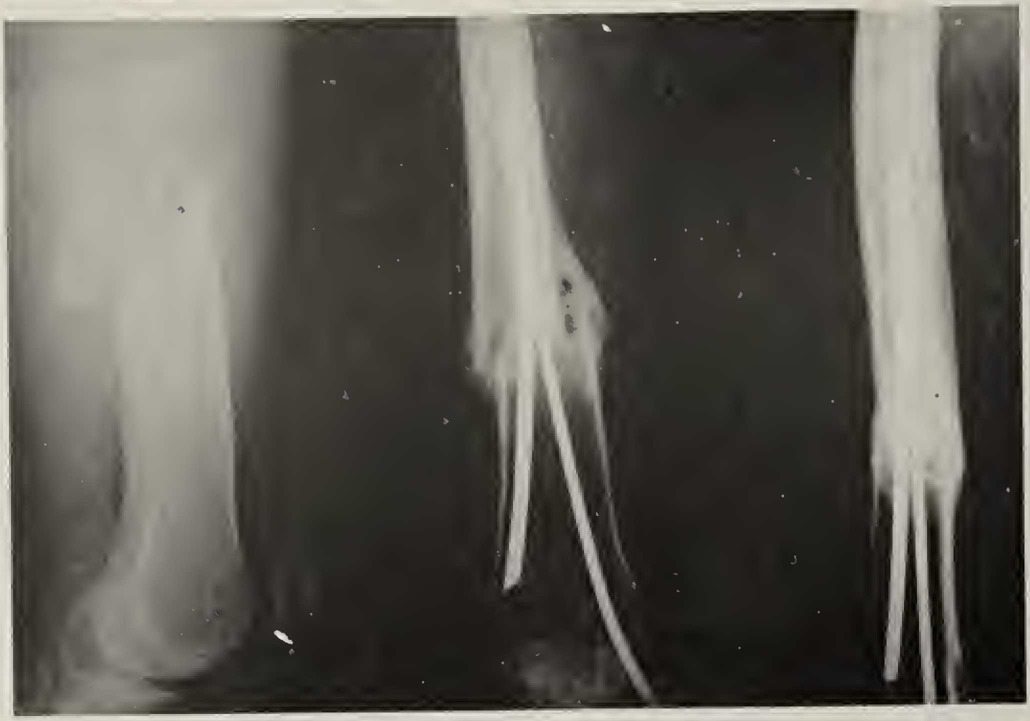
LOWER RIGHT: Comminution below the trochanter requires supplemental circular wires. This case was fixed by semi-open operation.



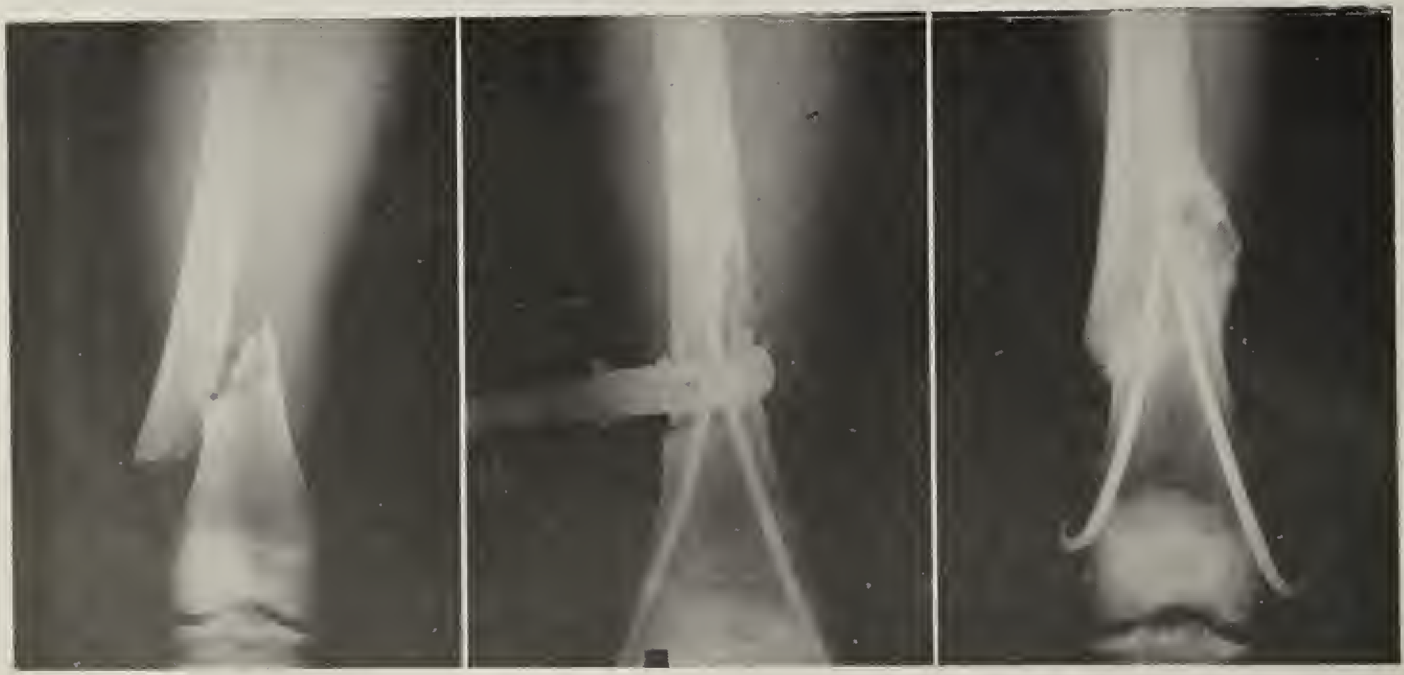
Supracondylar Area

TOP: Here one must deal with the other extreme. It is the lower fragment which is short and tends to angulate. This case is that of a 45-year-old woman. The pins have been correctly applied as a closed procedure and the heads were stress-relieved to prevent migration into the bone. Fixation was stable and immediate function permitted. The heads of the pins are faintly palpable beneath the skin.

BOTTOM: Male, age 37. Case similar to above. Closed pinning with good stability and immediate function. The heads of the pins have apparently migrated into the bone from pressure. The pins were not stress-relieved (curved with bending iron), and removal could be difficult.



Combined up and down pinning of the lower third gives the best fixation. This patient had huge femur. The quarter-inch (down) pin is 17 inches long but is still too short. Note large size of marrow cavity.



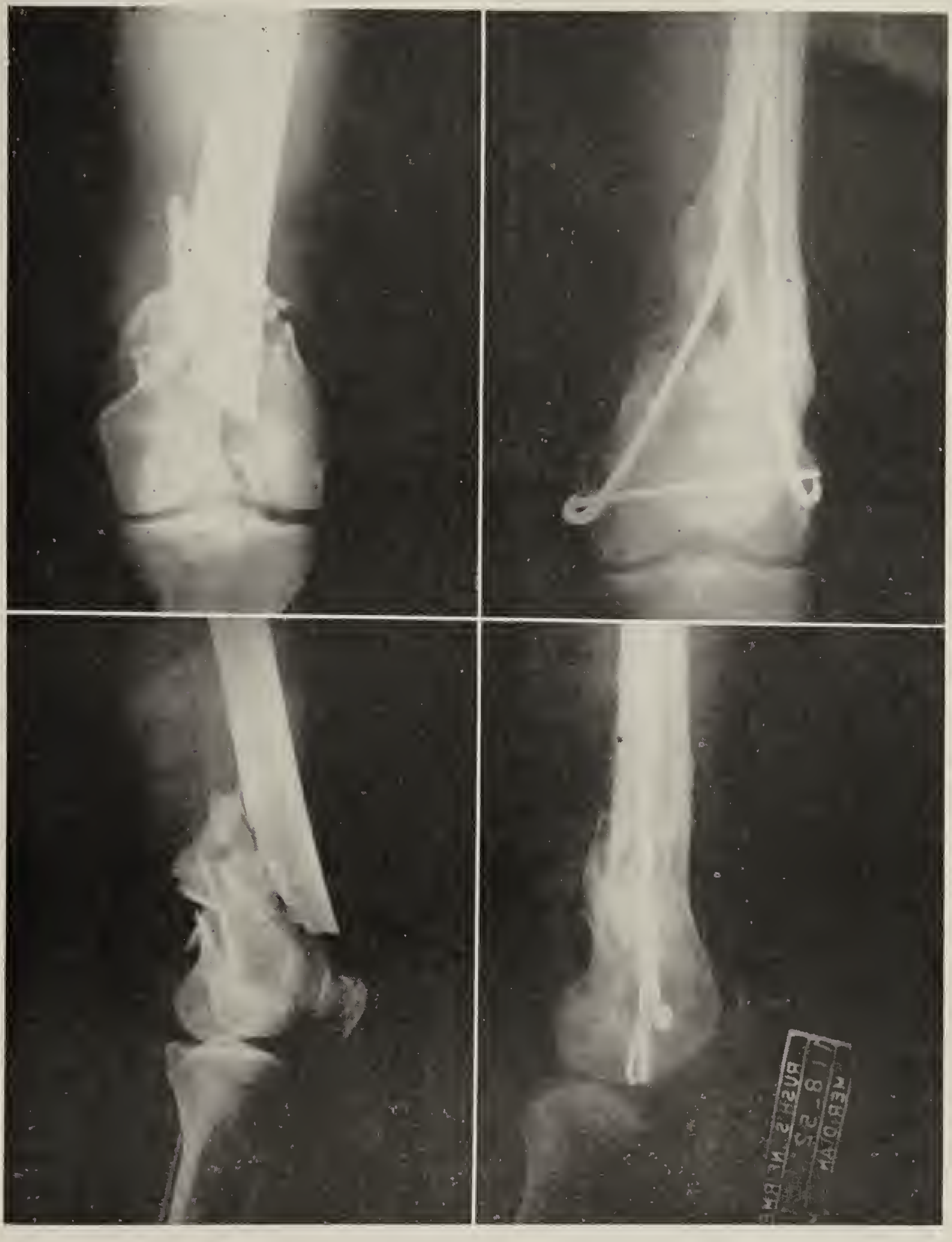
Adolescent. Open reduction. Bone clamp held position of bones while pins were driven. Fixation stable. In elderly patient fixation would not be so secure.

Lower Third

At this point and slightly higher is the poor healing area of the femur. It is difficult to secure fixation which will prevent rocking at the fracture site.

Try to secure full motion of the knee immediately. To fight for motion after muscle shortening and periarticular adhesions develop will cause rocking at the fracture which will delay healing.

Fractures above this level practically never require external splinting. In young adults splints are rarely necessary at this level or below. In older people the brittleness of the bone may prevent secure fixation and removable plaster splints might be needed.



Bag of Bones

This patient was a 62-year-old laborer with similar fracture of opposite ankle.

Reduction by traction with knee moderately flexed, upward counter traction beneath condyles.

The condyles were pinned as a closed procedure. A small incision was necessary to guide lateral pin into medullary canal. The medial pin produced distraction until it was curved.

K E S dressing from groin to toes worn six weeks. Healing required 8 months. Full function regained.

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi.

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

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EDITORIALS

STATE MEETING

We are looking forward now to our state medical meeting in Jackson which will be held May 10-13.

This should be a record breaker for attendance. The scientific meeting, medical organization, and the fellowship of the association combine for benefits no doctor can afford to miss.

Jackson, at the crossroads of the Deep South, continues to grow at a very rapid rate. It is a friendly city, clean and progressive. This year we will have an added interest in the rising four-year medical school.

JACKSON ISSUE

Our May issue of the journal for the most part will consist of papers from members of the Central Medical Society under the direction of our fine associate editor, Dr. L. T. Carl. We hope you will be pleased with this issue, as it is planned to serve our medical interest, in a well balanced way.

INDUSTRIAL MEDICINE

Industrial medicine is on the march the last few years. Our state association has evidenced interest in industrial medicine the last few years. *Time* magazine says 500 million man-days and $9 billion in wages are lost annually of injuries and illness of workers. In industry there is yet much room for prevention. More prompt treatment is needed for the injured and the acutely ill. A type of insurance to take care of the long-time illness is needed. Polio, TB, and cancer and other illness that lasts a long time must be given more consideration in insurance plans. The Blue Cross has served well for acute and short-time illness. The plan has encouraged prompt attention to the everyday sickness which has served to prevent much chronic illness. Promptness has counted for shorter stays in the hospitals and has made the strain of illness on the individual much less. But the time demands that chronic illness, and longtime illness, be given more consideration.

CHRONIC ILLNESS

Chronic illness has not been given adequate consideration, neither from a humanitarian standpoint nor a social and economical one as well. Chronic illness is a challenge to the medical profession and to the patience and endurance of those afflicted.

THE R. N.

With the hospital system we now have and are yet to have, no state can offer a better course for training the three-year nurse. Our system of junior colleges which is the best in the nation can help a lot in this respect. Let us utilize what we have at hand. The highly trained nurse is needed. She is the specialist, so to speak. We also need practical nurses, but the three-year graduate, the R.N., is the cornerstone to nursing when it comes to rendering good service to the very sick patient in bed. Our state can soon supply the shortage of this type nurse at a very reasonable cost.

News and Comment

W. WILSON TURNER HEAD OF BAPTIST HOSPITAL

W. Wilson Turner, administrator of the Louisiana Baptist Hospital, Alexandria, Louisiana, since 1950, has accepted the position of administrator of the Mississippi Baptist Hospital in Jackson, it has been announced by D. C. Simmons, of Jackson, president of the Hospital Board of Trustees.

Mr. Turner, who will assume his duties in the near future, succeeds Mrs. Karenza Gilfoy, who is retiring.

He is a member of the American College of Hospital Administrators of which there are only 200 members in the United States.

Previous to his present post he was assistant administrator of the Memorial Hospital, Houston, Texas, and formerly was business manager of the Hillcrest Memorial Hospital, Waco, Texas.

He is past president of the Central Louisiana Hospital Council, president of the Southwide Baptist Hospital Association.

Mr. Turner is a graduate of Baylor University, Waco, Texas, and attended the Graduate School of Business Administration, Northwestern University, Evanston, Ill.

He is married, is a Kiwanian and a Mason.

The Baptist Hospital in Jackson is a 256-bed institution at present with plans now in progress toward a 350-bed capacity.

It is owned by the Mississippi Baptist Convention which recently gave the trustees authority to construct a Medical Arts Building adjacent to the hospital.

The hospital has shown a steady growth during the last 25 years under Mrs. Gilfoy's guidance as superintendent. She is retiring because of ill health.

TOP DOCTORS OF SOUTH HONOR DR. SPIES

"For service to humanity, magnificent beyond measure. . . ."

With that tribute, Dr. Tom Douglas Spies, internationally famed nutrition scientist and physician, was honored in Birmingham, Ala., the past month by distinguished medical leaders from over the South, and Cuba.

The occasion, a dinner given by the executive council of the Southern Medical Assn., marked Dr. Spies' twenty-fifth anniversary in the battle against nutritional disease.

Dr. Spies is director of the Nutrition Clinic at Jefferson-Hillman Hospital, where much of his noted battle against pellagra and dietary deficiency has been carried out.

Dr. Spies is also past chairman of the SMA section of medicine and a recipient of the SMA Research Medal.

He was presented a special citation by the SMA executive council "in recognition of his outstanding contributions to the knowledge of the science of human nutrition, especially the elucidation of diagnosis and treatment of disease."

HIGH SCHOOL ESSAY CONTEST

The Seventh Annual Essay Contest among high school students on "Why the Private Practice of Medicine Furnishes This Country with the Finest Medical Care" opened January 1, 1954. It is sponsored by the Woman's Auxiliary in cooperation with the American Association of Physicians and Surgeons. All county medical societies or medical auxiliaries are urged to use whatever means are available locally to stimulate interest in the contest. An award goes to the state winner, and the three best essays in the state contest are entered in the national contest.

AMERICAN GOITER ASSOCIATION

The 1954 meeting of the American Goiter Association will be held at the Somerset Hotel, Boston, Mass., April 29, 30, and May 1. The program for the three-day meeting will consist of papers and discussions dealing with the physiology and diseases of the thyroid gland.

CANCER SEMINAR

Dr. Joseph S. Stewart, chairman of the Third Annual Seminar and Conference on Cancer Cytology to be conducted by the Cancer Institute at Miami, announces that the conference will be held on April 21-24, inclusive.

This year the conference will bring together several leading authorities on cancer from this country and abroad. The last day will be devoted to a special session for medical practitioners, who will visit the Cancer Institute to see demonstrations on the taking and preparation of cytodiagnostic tests for cancer of many types, with special sessions devoted to cancer of the uterus, breast, prostate, lung, and stomach. The latest advances in cancer diagnosis using new cytological methods and blood testing procedures will be presented.

MEDICAL EXAMINATION NOTICE

The Mississippi State Board of Health will hold Medical Examinations on June 21 and 22, in Jackson, Mississippi, at the Edwards Hotel, (second floor).

Examinations may be taken on the first two years only, (June 21), as well as on all four years of Medicine (June 21 and 22); or on the last two years (June 22) for those who have already passed the first two years examinations before this Board.

For application blank and other information write to:

Dr. R. N. Whitfield, Assistant Secretary
Mississippi State Board of Health
Jackson 5, Mississippi

NORTHEAST MISSISSIPPI MEDICAL

The Northeast Mississippi Medical Society held its regular March quarterly session in Booneville.

Dr. J. F. Grenshaw from the Seale Harris Clinic in Birmingham was guest essayist. His paper on the diagnosis and medical treatment of peptic ulcer was unusually well received by the doctors present.

Dr. Roberts, associate Dean of the Medical School at Memphis, was the guest speaker at the banquet. He gave a very fine discourse on medical education, seasoning his facts well with wit and wisdom.

The next meeting of the Northeast Mississippi Medical Society will be held in Corinth. The men in this fine city are busy growing their centennial beards, which no doubt will be full blown by June.

WILKINSON—AMITE COUNTY

The Wilkinson-Amite County Medical Society met at the Field Memorial Community Hospital at at the Field Memorial Community Hospital at Centerville.

Dr. Ray Browning of Centerville gave an interesting discussion of the newer methods of analgesia and anesthesia, their uses and dangers. Dr. D. H. Thornhill reviewed the present concepts of diagnosis and treatment of virus hepatitis. Following an interesting motion picture film in color, presented by Drs. R. J. and S. E. Field, surgical, of tuberculosis, an excellent dinner was served the members and their wives by Miss Bloes and her nursing staff. Dr. and Mrs. Richard Munson were guests from Clinton, La.

STUDENT-PATIENT TRAINING

Dr. George E. Miller of Buffalo offers some stimulating thoughts on bedside teaching of first-year medical students. He observes, "First-year medical students bring to their patients great sensitivity to non-medical needs and comfort." It is difficult to escape the conclusion that this is a characteristic that is trained out of men during their medical school years. "And there is reason to believe that if this is a desirable quality in the physician it would be better to encourage its growth through the early years of medicine than to try to recreate it in special courses during the later years."

In the above Dr. Miller has something well worth serious consideration by the medical schools. It does seem that medical schools have not guarded against teaching the student away from the personal interests of his patient and away from non-scientific phases of medical practice.

PUBLIC RELATIONS TIP

Speaking to the sixth annual Medical Public Relations Conference, on the day before the Annual Clinical Session of the American Medical Association in St. Louis, Dr. Walter B. Martin, Norfolk, Va., president-elect of the AMA stated. . . "I like to think of public relations not as a means of putting ourselves in a better light before the public, but as a way by which we can learn better how to serve the public and constantly to enhance the quantity and quality of medical care and its availability" . . . He also pointed out that "medicine has outgrown the little black bag . ." that "health is no longer entirely an individual matter between a physician and a patient." Problems that arise, he added, need careful joint exploration for the purpose of coordinating all health activities for the total benefit of the public.

GP SYMPOSIUM ON TB

The third annual Symposium on Tuberculosis and other Chronic Pulmonary Diseases for General Practitioners will be held in Saranac Lake, New York, July 12-16, 1954.

The registration fee for this five-day symposium is $40 for members of the American Academy of General Practice and $50 for non-members.

Richard P. Bellaire, M. D., General Chairman, P. O. Box 2, Saranac Lake, N. Y.

Approved for 26 hours of formal credit by the American Academy of General Practice.

ABSTRACT FROM PEDIATRIC LITERATURE

Harvey F. Garrison, M. D.

MEETING THE EMOTIONAL AND SOCIAL NEEDS OF CHILDREN WITH RHEUMATIC HEART DISEASE. Hale F. Shirley, San Francisco, Calif. Quart J. Child Behavior 4:289-298, July 1952.

"In the treatment of rheumatic fever in children, attention to the emotional and social aspects of the illness is of no less importance than the inauguration of a sound medical regimen . . . Typically, rheumatic fever has its onset in early childhood when the child's emotional foundations for social living are being laid. At a time when the child should be exploring the realities of his physical and social environment, developing constructive feelings about himself in relationship to other children, and establishing methods of dealing with social situations in satisfying as well as socially acceptable ways, the illness takes him out of the stream of social living for prolonged and sometimes repeated periods. The child finds himself compelled to remain in bed or otherwise to limit his activities for a period of weeks and months when he not only feels well but is also driven by powerful but normal urges to be active." The author elaborates this thesis by case material. A discussion by a group of hospitalized adolescent girls with rheumatic fever is reported verbatim to describe in a dramatic way the questions and fears that upset them.

The anxiety of a life-threatening disease, often with no outward physical manifestations, superimposed on the individual child is described. The different ways in which this has an impact on a child, depending on his age and his particular personality, are implied. Cogent evidence of the impact of the child's illness on the family is given with respect to obtaining optimal treatment for the child and aid for the parents, economically and psychologically. Awareness of the meaning of bed rest to the child, and of the limitation of the child's ability to restrict himself in muscular activity help the pediatrician to treat the child in a flexible way. The author wisely indicates that physicians have limitations in what they can do to treat a child with this disease and warns against disappointment based on perfectionistic goals. He emphasizes the vital positive role the physician plays with his medical knowledge, his understanding of the patient and his family and his familiarity with community resources.

COMMENT:

This is a very interesting article and should receive the careful consideration of any physician who is treating rheumatic fever, more particularly in the child. We have met many problems as indicated by the author of this article. We have just recently had a very severe case of rheumatic heart disease in which the heart was large and in fact had quite a generalized edema and effusion in the pleural cavity along with pericarditis with effusion. This boy has just been in to see me and is now recovering nicely. I think this is a most excellent article.

MD'S NEVER STOP STUDYING

In these busy times the average practicing physician still manages to devote the equivalent of 83.3 eight-hour days a year to keeping abreast of current developments in the field of medicine. This striking figure is one of many brought out in a preliminary report by the AMA's Council on Medical Education and Hospitals on its recent survey of postgraduate medical education.

Ways in which the doctor keeps up-to-date on medical matters are divided into five categories: 1) medical reading; 2) professional contacts with colleagues, consultants, etc.; 3) hospital staff meetings; 4) attendance and participation in medical society and specialty group meetings at the local, state and national level, and 5) postgraduate courses conducted by 26 different types of organizations such as medical schools, health departments, medical societies, hospitals, etc.

There seems to be little doubt that physical and intellectual fatigue, as well as painful emotions, decrease resistance of the body to infection; but the physiologic mechanisms which determine these important relationships are totally unknown. Despite all this ignorance, however, a belief shines as a beacon to guide our efforts. It is that the defense mechanisms of the body which promote resistance to infection appear to be closely related to the physiologic processes which make for good health — good health being here measured in the terms of broadly referred to as well-being by the layman. The inner logic of the program of antituberculosis associations should lead them to become truly health associations. For it can hardly be doubted that, in final analysis, health is a positive attribute rather than merely the absence of disease. Rene J. Dubos, Ph.D., Am. Rev. Tuberc., July, 1953.

AMERICAN GERIATRICS SOCIETY

The eleventh annual meeting of the American Geriatrics Society will be held at the Fairmont Hotel in San Francisco just preceding the meeting of the American Medical Association. The scientific sessions of the meeting will begin Thursday afternoon, June 17, and continue through Saturday morning, June 19.

Hotel reservations should be made through the San Francisco Convention and Visitors Bureau, 200 Civic Auditorium, San Francisco 2, California. Members should reserve accommodations immediately, stating time of arrival and departure date, because the hotels expect to be filled to capacity.

The meeting will be open to all members of the American Geriatrics Society and to physicians and other scientists who are interested in the field of geriatrics. The program will cover many aspects of geriatric medicine, and there will be several panel discussions on such subjects as recent developments in cardiology, methods of determining operability in older patients and the relation of industry to geriatrics. Outstanding clinicians and investigators will participate.

$9200 FOR A MEDICAL DIPLOMA

Medical college training in America costs approximately $9200 today. That's what the average student spends for four years in medical school, according to a report published in the February issue of the *Journal of Medical Education.*

The $9200 does not cover the cost of premedical training, internship and residency training, or the cost to the young physician of setting himself up in practice.

ANNOUNCEMENT

J. Harvey Johnston, Jr., M. D., and George E. Twente, M. D., announce the association of W. Coupery Shands, M. D., in the practice of general surgery, 727 Carlisle, Jackson, Mississippi.

Jerome Schroff, M. D., announces the opening of his office for the practice of psychiatry, 902 Sterick Building, Memphis, Tennessee.

FOR SALE: One Borg-Warner 100 milliampere x-ray unit. Practically new tube. Motor-driven table, tube stand on track. In good condition. If interested, contact Dr. K. D. Terrell, the Medical Center, Prentiss, Miss.

Deaths

DR. T. M. DYE

Dr. T. M. Dye, past president of the Mississippi State Medical Association and two-term mayor of Clarksdale, burned to death early Thursday, April 1, one mile north of the landing at De Soto Lake, near Rena Lara, Miss., when the trailer in which he was sleeping, caught fire.

County officials believe that a kerosene stove exploded in the trailer and that Dr. Dye may have perished while asleep. The trailer was consumed by flames. Dr. Dye was 80.

Dr. Dye, according to members of his family, left Clarksdale Tuesday in his car for De Soto Lake, where the trailer, owned by a group of hunters, had been parked for use at the opening of the turkey season Thursday. Dr. Dye, who was camping in the trailer, was alone.

Since retiring from active practice, the physician had spent considerable time fishing and hunting. He had recently returned from an extended visit with a nephew at Royal, near Hot Springs, Ark., where he had been hunting.

Dr. Dye had practiced medicine for more than 50 years, belonging to the Fifty-Year Club of the Mississippi Medical Association. He served as secretary of the state association for 30 years and still held the title of secretary emeritus. He was also a member of the American Medical Association and the Southern Medical Association.

Born Sept. 5, 1874, in DeSoto County, he was graduated from Millsaps College and the Tulane School of Medicine at New Orleans and did postgraduate work at the New York School of Medicine.

Dr. Dye served as mayor of Clarksdale from 1937 to 1945.

He had been a practicing physician in Clarksdale since 1909 and prior to that time practiced medicine in Sherard and Florence, Miss. He was surgeon for the Illinois Central Railroad for many years.

Dr. Dye was a member of the Clarksdale School Board for 19 years, a member of the board of trustees and the board of stewards of the First Methodist Church in Clarksdale.

Dr. Dye leaves four sons, the Rev. Melville Dye of Jackson, Miss., Bradford Dye of Grenada, Miss., and Thomas Dye and Millsaps Dye of Clarksdale; two sisters, Mrs. Ethel Dye Greenhaw of El Dorado, Ark., and Mrs. J. L. Gerdine of Ocala, Fla.

DR. W. L. LITTLE

Dr. William Lee Little of Wesson died Saturday, February 27, at 2:00 p. m. at Copiah County Hospital, Hazlehurst.

Doctor Little was born August 27, 1868, at Rockport, Mississippi. He graduated from Tulane University receiving his medical degree in the class of 1889. He was licensed to practice medicine in Mississippi by the State Board of Health on written examination April 11, 1888. He served as health officer of Copiah County, local registrar of births and deaths, president, Tri-County Medical Society (1910), member of the State Board of Health (1908-1912), and president, Mississippi State Medical Association (1938).

The doctor was awarded a 50-year practice certificate, June 13, 1948, having practiced medicine in Mississippi 50 years at that time. He served as physician and surgeon to the Illinois Central Railroad in Copiah County for many years and was honored by the Illinois Central by being given a lifetime pass over its lines for 40 years of continuous service.

Doctor Little was nominated by the State Medical Association to the American Medical Association as Mississippi's candidate for America's outstanding general practitioner in 1948. Doctor Little stated in an address which he made two or three years ago, "I had rather be a country doctor than anything I can think of. Country people have greater appreciation of the things you do for them, and you have a greater opportunity of doing something for your fellowman."

Doctor Little is survived by his widow, two daughters, Mrs. B. F. Youngblood, Wesson, and Mrs. L. Preston Norman, Jackson, and two sons, Mr. Paul E. Little, Wesson, and Dr. A. H. Little, Oxford.

DR. B. R. CLARK

Dr. Bernice Rodney Clark, 70, died of a heart attack February 23, at his home in Lorman, Miss.

He had served the Lorman community faithfully for the past 44 years. With his passing the community lost not only its medical adviser, but also a loyal and devoted friend, who had been active in every movement for its betterment and welfare. He had taken an active part in church, school, masonic, road improvement, rural electrification, and political issues, always striving to make his hometown a better place in which to live.

In appreciation of many years service to Illinois Central railroad employees he was awarded a lifetime pass by the railroad. He was a member of Masonic Lodge 56 of Lorman, a member of the Wahabi Temple of Jackson, a member of the Cane Ridge Methodist Church of Lorman.

Survivors include his wife, Mrs. Nettie D. Clark of Lorman, one sister, Mrs. L. C. Faris of Lorman, a niece, Mrs. S. H. Leonard, Winona, and a nephew, Bernell Faris of Lorman, and a number of great nieces and nephews, including Mrs. Edwin Torreh of Natchez.

DR. R. S. SAVAGE

Dr. Richard Stephen Savage, 51, prominent and beloved Brookhaven physician, died suddenly at his home.

Dr. Savage was active in his medical practice until the time of his death, but had been advised by physicians during the past several years to take rests each day. He had served this community faithfully since 1927.

Born in Mobile, he received his high school education in Brookhaven and completed his medical course at Tulane University. He first practiced in Brookhaven where he continued to reside.

He was a member of the Board of Stewards of the First Methodist Church, chairman of the Methodist Children's Home, Jackson, a member of the Tri-County Medical Association, Mississippi Medical Association, and American Medical Association, a Mason and past potentate of Wahabi Temple, Jackson, Brookhaven school board.

Survivors include his wife, the former Ruth Brock of McComb; one daughter, Barbara Savage, a junior at DePauw University, Greencastle, Ind., and one sister, Ann Savage of Mobile, Ala.

DR. O. C. BREWER

Dr. O. C. Brewer, Tunica County physician for 37 years, died at Tunica County Hospital after a lengthy illness. He was 73.

Dr. Brewer began practicing medicine in 1910, moved to DeSoto County in 1917, and had practiced in DeSoto and Tunica counties since that time.

He attended Mississippi State College and was graduated from Tulane University Medical School in New Orleans. He was a member of the Tunica Baptist Church and a Mason.

He leaves his wife, Mrs. Lizzie Clark Brewer; four sons, J. H. Brewer of Tunica, C. D. Brewer, of Robinsonville, Miss., and C. J. Brewer of the Army; a daughter, Mrs. Betty Brewer Johnson; four brothers, I. C. Brewer of McComb, L. M. Brewer of Baton Rouge, La., C. A. Brewer of Crowley, La., and A. N. Brewer of Summit, Miss.; three sisters, Mrs. Frank Farrell and Mrs. M. T. Gutelius, both of Long Beach, Calif., and Mrs. G. M. Guy of McComb, Miss., and 11 grandchildren.

DR. T. B. LEWIS

Dr. Theodore Berkeley Lewis, outstanding Mississippi physician for 51 years and prominent in the civic affairs of Greenville, died suddenly February 23 at his home, of a heart attack. He was 76.

Dr. Lewis was born at Tylertown, and lived his early life at Columbia. He was graduated from the University of Louisville Medical College, Louisville, Ky., and the Valparaiso, Ind., School of Pharmacy.

It was while attending Louisville College that he met Miss Willie Van Pelt of Louisville, Ky., and they were married in Louisville.

Dr. Lewis entered the practice of medicine at Jefferson College, Washington, Miss., near Natchez, and came to Greenville 43 years ago from Washington.

Only last year Dr. Lewis received from his University a certificate honoring him on his fiftieth anniversary of his graduation. The certificate was signed by Dr. Phillip Davidson, president, and a former Greenvillian himself.

When Dr. Lewis first came to Greenville he was associated with Dr. A. G. Payne, prominent Delta physician, who died several years ago.

Named last year to the Fifty-Year Club of the State Medical Association, he was Washington County's outstanding physician in a Delta Medical Society 18-county award.

Dr. Lewis was a charter member, past president and director of the Greenville Kiwanis Club and was starting his twenty-seventh year of perfect attendance. Only a few days ago he made a trip to the Greenwood Club to make up his attendance. He attended many of the Kiwanis conventions.

He was charter member and served as president and vice-president of the Delta Medical Society.

Dr. Lewis was a member of the official board of the Trinity Methodist Church at the time of his death and had served for many years as a member of the First Methodist official board.

He planned to retire in 1940, but because of the shortage of physicians during World War II he practiced medicine until his death.

He was an ardent sportsman and fond of fishing and hunting. He was also an ardent baseball fan. He was a member of the board of school trustees.

Dr. Lewis was the county physician and the Washington County poor house was under his direction. He was a great favorite among the persons who live there and he did much for their welfare.

He leaves his wife, two daughters, Mrs. J. B. Franklin of Jackson and Mrs. Margaret Blake of Greenville, two granddaughters, Mrs. J. R. Bettendorf of North Perking, Ill., Miss Sharon Franklin of Jackson and a great grandson, James Bettendorf of North Perking, Ill.

Woman's Auxiliary

TENTATIVE PROGRAM

State Meeting, Heidelberg Hotel, Jackson, Miss.,

May 11 and 12, 1954

Mrs. S. Lamar Bailey of Kosciusko, president of the Auxiliary to the Mississippi State Medical Association, urges a record attendance at the state meeting this year, announcing several enticing features for an unusually good program.

First, Mrs. George D. Feldner, New Orleans, La., president of the Woman's Auxiliary to the Southern Medical Association, will be honor-guest, as will also be Mrs. DeWitt Milam of Monroe, La., at the Auxiliary Luncheon, May 11.

Second, Kennington's is staging a private style show in the Fashion Theatre on the third floor of the store in the afternoon, honoring members of the Auxiliary.

Other calendar dates to remember are:

Executive Board Meeting, 4:30 p. m., May 10, Silver Room, Hotel Heidelberg.

Past-Presidents' Breakfast, 7:30 a. m., May 12, Green Room, Hotel Heidelberg.

LOST! A number of seasoned, well-loved members of the Auxiliary who seem to classify themselves as "old members" (the rest of us do not feel that way about them). These gracious experienced women have been straying away for several years.

Will anyone having any knowledge of these ladies please help them to return to the "fold", as we feel we have lost some valuable assets to our organization.

A large reward of good fellowship and friendship is offered for their return.

FOUND! The above in the Auxiliary bulletins for Utah, Montana, and West Virginia, and we think it applies for Mississippi members too. Won't you plan to be with us at the state meeting in Jackson, May 11 and 12? We'll love having you and try harder to keep you!

4-H WINNERS GET *TODAY'S HEALTH*

Inaugurating a new project in its rural health education program, the Wisconsin State Medical Society decided in November to give one-year gift subscriptions to *Today's Health* magazine to all 4-H Club achievement winners throughout the state. In announcing the gift, the Society urged each of the 40 winners to circulate the magazine to other club members. For many years, the Society has given engraved certificates to these winners but this time felt that a subscription was a much more practical gift. Other medical societies might well follow Wisconsin's example.

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2/2009M

The Abuse of the Antibiotics in Chronic Running Ears, Especially in Children*

LEWIS F. MORRISON, M. D.†
San Francisco, California

THE INTELLIGENT use of the antimicrobials has made great changes in the clinical course of acute otitis media. The complications of otitis media; acute mastoiditis, septicemia, lateral sinus thrombosis, meningitis, and brain abscess of otitic origin, are now clinical rarities. It is almost to say that such cases now represent either neglect or inadequate treatment. The incidence of acute mastoiditis during the last five years is diminished by 95 per cent. The complications are similarly less frequent. The mortality rate is less than one per cent. Even the larger teaching centers do not have sufficient number of these cases adequately to teach the oncoming residents the fundamental principles of simple mastoid surgery. There is little opportunity to offer them the experience required to obtain proficiency in handling the gouge and mallet. Postaural mastoid surgery is fast becoming a lost art. In most respects it is fortunate that this is so.

For the same reasons the number of cases of chronic discharging ears is diminished. It was not so many years ago that a large portion of the time devoted to the out-patient clinic was taken up by seeing and treating patients with chronic running ears. The older, adult members of this group of patients are fast becoming actuaries figures. The source of supply from the younger group is progressively diminishing as a result of our improved methods of handling the acute cases more efficiently.

Most of the chronic running ears are the result of infection having traveled up the eustachian tube, and having established itself in the middle ear. If this is uncontrolled there will be marked changes in the mucous membrane lining of the middle ear and mastoid cavities. The accompanying increased intratympanic pressure will produce spontaneous rupture of the tympanic membrane or cause such pain that medical advice is obtained. The number of hours or days the middle ear pathology persists prior to the institution of satisfactory therapy, either by means of the antimicrobials or surgical drainage, or both, plays a major role in the ultimate healing process. The opportunity for beneficial results of antimicrobial therapy is entirely dependent on an existing and adequate blood supply. If the blood supply is not present there is no opportunity for the drug to gain access to all parts of the infected area and such beneficial results as are obtained will be confined to the periphery where the blood supply is adequate. The success of treatment then depends on the selection of a suitable therapeutic agent and the administration of the drug in sufficient quantities to obtain an effective concentration level and to maintain this level for a sufficient period of time to assure complete recovery. It should be evident that any area where there is pus under pressure will not have an adequate blood supply. Some time is being devoted to these phases in order to emphasize the mechanism responsible for the production of the chronic running ear. The ischemia due to the diminished blood supply affords an opportunity for thrombosis of the smaller vessels, an extension of the infection, the breakdown of the involved tissues whether they be mucous membrane or bone, and the setting up of the factors necessary for the continuation of the infectious process as a localized condition. As was formerly stated, the absence of the blood supply precludes the opportunity for the antimicrobial to be of any intrinsic value other than to assist the defense mechanisms to wall off the periphery of the infection.

Another pathway for middle ear infection is by way of the external ear producing perforations in the tympanic membrane. The common causes are, blast injuries, compression of the column of air in the ear by blows, traumatic injury to the ear drum by foreign objects such as toothpicks, matches, and bobby pins, and perforations resulting from burns caused by beads of hot metal or slag produced during welding and cutting operations. Traumatic rupture of the tympanic membrane associated with head injury and basal skull fracture is another cause. The majority of these perforations of exogenous origin will heal without complication if the middle ear can be kept free of infection. Under no circumstances should the external auditory canal be irrigated. Common sense measures to avoid contracting and contacting the common cold should be employed and under all circumstances the patient should be given detailed advice about keeping water out of the ears during bathing, or taking a shower, and to exert extreme caution when blowing the nose.

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†From the Sub-Department of Otorhinolaryngology, University of California School of Medicine, San Francisco, California.

*Presented at the sixty-fifth annual meeting of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, Feb. 9-12, 1954.

Although the end result is not a chronic running ear, there is one other method of producing a chronic middle ear infection: the inadequate treatment of acute otitis media with the antimicrobials. The first pitfall rests on insufficient amounts of the drugs carried on for too short a period of time. Under such an inadequate therapeutic routine the active pathology may be controlled, the pain may subside, and the general systemic evidences of infection may disappear. Subsequently one of three things occurs. First, there may be complete recovery and no unpleasant sequelae. Secondly. ten days or more after the withdrawal of the drug therapy there may be a recurrence of the smoldering infection. Resumption of the therapy may not produce satisfactory results. Thirdly, the acute phases of the infection may be controlled and a residue of exudate, cellular debris and even some semi-viable organisms remain incarcerated in the middle ear for weeks or longer. The repair process under these circumstances is slow, and frequently is accompanied by the laying down of fibrin bands which ultimately become scar tissue. This middle ear will have lost much of its function. The impaired auditory function, conductive type, will not respond to any present forms of therapy, and it is therefore permanent. The results of the auditory screening tests of public grade school students conducted during the last several years, has shown an increasing amount of hearing deficiency and actual deafness in this group. In most instances an early myringotomy would have afforded drainage, permitted normal recovery, and would have avoided the permanent auditory damage. It is hoped that this information will become common knowledge. It is mandatory that the practitioner who assumes the responsibility of treating the acute otitis media, will extend this responsibility to include examining the patient's tympanic membrane at frequent intervals during the next ten to fourteen days. If the response to therapy is correct, the tympanic membrane should be normal in all respects at the end of two weeks' time. The hearing should have returned to normal. If, at the end of the two weeks' period the tympanic membrane is not normal or the hearing is impaired, active local and general measures must be instituted promptly in order to avoid permanent hearing loss.

The term "chronic running ear" is loosely applied to describe any one of the several entities ranging from a chronic eczematoid external otitis, to a chronic otitis media with tympanic perforation. The differential diagnosis is not difficult and is essential in order to select the correct mode and type of therapy. It is not uncommon to encounter a chronic external otitis secondary to a chronic middle ear infection. In such an instance the correct therapy for the external otitis, based on the assumption that it is a primary condition may be of no value in controlling the middle ear pathology, and may be detrimental. It is essential that the primary condition receive proper attention before any progress can be made in eliminating the secondary infection. The properly conducted routine otologic examination will settle these problems.

The widespread, blind, almost puerile acceptance of a generally heard statement that the wonder drugs will cure anything and everything nurtures poor medical practice. The trial and error method should not be employed to replace a properly conducted routine examination and differential diagnosis. When antimicrobial therapy is prescribed, it is assumed that it is instituted to combat bacterial infection. Although there is no total specificity, there is usually sufficient group specificity to indicate that one drug or one combination of drugs will be most effective. It is therefore advisable to ascertain the bacterial flora present, isolate the individual members, segregate the pathogens, and run sensitivity tests. The information obtained in this manner permits intelligent therapy. This statement is presented in a didactic manner with the full realization that we do not have the complete answer for all of the problems. However, there are sufficient evidences of specificity, or indications of specificity, to negate recommending a trial and error method on the basis that it might do some good, and at the same time it is appeasing the patient's desire for treatment with some one of the newer drugs.

A rather large number of the chronic running ears will respond to properly selected local and/or general therapeutic measures. Under these circumstances we can expect some of them to cease discharging. This frequently permits the perforation in the tympanic membrane to heal. Even though the ear tissue replacement be thin and somewhat fragile, the drum is intact and the hearing is improved. In other cases the patient is greatly pleased with a marked reduction in the amount of discharge, and particularly grateful for the elimination of the foul odor which so frequently accompanies the chronic discharge.

Other types of middle ear pathology, fundamentally not suited for medical treatment, may show some improvement. Too often this produces a false sense of security and a tendency for laxness in following the recommended treatment routine. The quiescent period is frequently followed by an acute exacerbation of major import and severity. The patient with the chronic running ear, particularly the child who has good hearing, should be afforded every opportunity for obtaining the advantages of a conservative regime. However, the mere fact that the antimicrobials may produce a diminution in symptoms and annoyance, should not permit these minor intransient benefits to bias one's judgment and deprive this patient of permanent benefits that could be obtained by surgery. The improved endaural techniques, when applied to the properly selected types of pathology, produce striking and permanent results. The hearing is preserved, the infection is eliminated, and so is the opportunity for intracranial extension of the pathology. Modern endaural surgery has eliminated the long postoperative period of treatment which was an integral part of postauricular surgery. The elimination of this prolonged, painful treatment, permits the employment of endaural surgery in children.

There are no logical reasons why medical and surgical procedures should be considered competitive. Each has its merit, and when the diagnosis is correct, neither can be substituted for the other without compromise as far as the ultimate results are concerned. There are few instances where both will accomplish equal results.

The antimicrobials are a great adjunct in treating the chronic running ear. There is sufficient available information regarding the properties of these drugs to decry the employment of any of them in a manner which constitutes abuse. The time spent in obtaining the available information regarding these specific properties will be of great benefit to both your patient and yourself. We all enjoy obtaining good results. The enjoyment is most complete when the results are obtained by the intelligent application of the available knowledge. There are no safe shortcuts. The newer therapeutic agents should be regarded with suspicion until they have received the stamp of approval from qualified, unbiased sources. Enjoy toying with theoretical considerations, and your flights of fancy on a speculative basis, but confine your experiments to those you are qualified to control.

Current Management of Carcinoma of the Prostate*

W. E. KITTREDGE, M. D.†
New Orleans, La.

It has been estimated that currently between three and five million men in the United States probably are victims of carcinoma of the prostate. If the condition is diagnosed in the early stages, cure should be possible. Unfortunately, because the disease gives no indication of its presence in the early stages, less than 10 per cent of cases are recognized early enough to permit complete extirpation. For this reason, it seems desirable to review the various means at our disposal for early recognition and management of this malignant disease.

DIAGNOSIS

Location—Carcinoma of the prostate is clinically recognizable in the majority of cases by simple rectal palpation, since the lesion originates in the periphery of the gland in about 85 per cent of cases. The most frequent site is the posterior aspect of the gland. According to Monroe[1], 73 per cent begin in the posterior lobe, 16 per cent in the anterior lobe and 9 per cent in the lateral lobes.

Clinical Manifestations—Symptoms of carcinoma of the prostate usually do not appear until urinary obstruction develops causing difficult urination, or metastasis occurs, producing pain localized in or near the rectum, lower abdomen, perineum, back or legs. Patients sometimes complain only of unilateral or bilateral sciatica. Late manifestations include, cachexia, loss of weight, anemia and other systemic symptoms.

Rectal Examination—Rectal palpation of the prostatic capsule may reveal, in the early stages, a small, discrete, nodular, firm area, or in more advanced cases, an irregular, extremely firm, palpable mass infiltrating the prostate with fixation of the gland and distortion of its normal contours. Both seminal vesicles may be involved or the growth may extend into the periprostatic areas to obliterate the normal peripheral demarcations of the gland. The over-all size of the prostate may or may not be increased. Prostatic carcinoma must be differentiated from calculous disease, which can be easily excluded by a plain roentgenogram of the prostatic region, tuberculosis, which can be eliminated by roentgenographic and bacteriologic studies of the entire urinary tract, and deep-seated chronic prostatic infection. It is sometimes difficult to distinguish chronic inflammatory disease of the prostate from cancer until the process has partially resolved, at which time palpation will reveal a softened gland.

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†From the Department of Urology, Ochsner Clinic and Tulane Medical School, New Orleans.

*Presented before the Central Medical Society, December 1953, Jackson, Miss.

Determination of Serum Acid Phosphatase—Acid phosphatase appears in the prostate at puberty and the content is high. Small amounts are found in the serum of normal persons but large amounts are found in serum of more than one half of men with metastases to bone from carcinoma of the prostate. Although in patients with bony metastases the level may be normal, it is not elevated in patients without bony metastases. Moreover, 90 per cent of men with demonstrable bony metastases from prostatic cancer will have elevated serum alkaline phosphatase. However, since it is also elevated whenever new bone forms, it is not pathognomonic of metastatic prostatic carcinoma.

Biopsy—Neither needle aspiration biopsy nor transurethral biopsy of prostatic tissue is reliable. In the former, it is often difficult to place the needle in the desired region or to obtain sufficient characteristic tissue for accurate diagnosis. In the latter, often tissue cannot be taken from an area close enough to the periphery of the gland to include the suspected part.

Prostatic Secretion—Papanicolaou's method of demonstration of neoplastic cells in the expressed prostatic secretion requires special training and considerable experience. Moreover, it is more difficult to differentiate cells in prostatic secretion than in most other body fluids. Finally, failure to demonstrate malignant cells in prostatic secretion does not preclude a diagnosis of cancer because the majority of prostatic carcinomas originate in the periphery of the gland so that their cells are not as likely to appear in the specimen obtaining by prostatic massage. For these reasons, this method is not considered reliable enough for general use.

Sedimentation Rate—There appears to be no consistency in the sedimentation rate of patients with prostatic cancer. Published reports of elevated sedimentation rates in these patients range from almost 100 per cent to as little as 50 per cent of cases.

Surgical Perineal Biopsy—This is the most certain means of diagnosing prostatic cancer in patients with small suspicious lesions detectable on rectal palpation. In addition to being a simple procedure to perform, the dangers are slight and the morbidity low.

TREATMENT

Treatment of carcinoma of the prostate may be considered under two broad categories; 1) surgical or 2) palliative. Selection of the method to be employed depends on the stage of the disease when the patient is first seen. It is now generally believed that in the early stages, the disease is potentially curable by radical surgical excision. Unfortunately, less than 10 per cent of patients with prostatic carcinoma are seen when the disease is still curable. In the majority of advanced cases palliative measures consisting of irradiation or hormonal therapy will control the symptoms and retard the progress of the disease.

Surgical Treatment—Radical prostatectomy is generally considered contraindicated in men over 70 years of age, because they can be expected to live fairly comfortably with their disease the remaining years of their lives. Moreover, for obvious reasons patients in poor general physical condition are considered ineligible for such an extensive operative procedure. Radical prostatectomy is therefore indicated in all men with early carcinoma of the prostate under 70 years of age in good general physical condition. Many also believe that should be done in those men in whom the gross appearance of the tissue or the palpable characteristics of the prostate are not suggestive of carcinoma but in whom microscopic examination of tissue removed by subtotal prostatectomy reveals a localized highly malignant, anaplastic, carcinomatous growth. These are believed to represent a malignant lesion which is unlikely to have extended to the capsule at the time of enucleation.

The perineal approach for radical prostatectomy, first introduced by Hugh Young in 1906 and later modified by Belt[2],[3] and others, is generally considered preferable to the retropubic. By the former approach it is possible to obtain a biopsy of any suspicious nodule in the posterior capsule so that the surgeon can determine in advance whether or not radical prostatectomy is necessary. By approaching the prostate along the rectal plane beneath the anal sphincter, important nerves and blood vessels are avoided and the urethral sphincter is not injured. The incidence of postoperative bleeding and morbidity is low. The operative mortality rate is equivalent to that of subtotal prostatectomy by any other approach.

Reports in the literature indicate that about one half of the patients with early carcinoma of the prostate treated by radical perineal prostatectomy have survived five years without evidence of recurrence. In contrast, the average reported five-year survival rate of untreated controls without metastases when first seen was 10 per cent and 34.3 per cent for those receiving palliative therapy.

Palliative Therapy—For those patients whose disease is considered incurable palliation may be obtained 1) by relief of urinary obstruction when present either by transurethral resection or permanent suprapubic cystostomy and 2) by therapy irradiation or hormonal therapy.

Irradiation Therapy—Deep roentgen ray therapy has only limited palliative value in prostatic carcinoma. In an occasional patient roentgen ray may affect the metastatic lesions to a great enough extent to make the patient more comfortable or to prevent sloughing or bleeding from the local growth but a dose which is strong enough to affect the prostatic tumor materially would injure neighboring structures. The severe local reaction produced by radium contraindicates its use.

Implantation of radioactive isotopes directly into the lesion constitutes another form of irradiation recently employed extensively both by us as well as by others. However, insufficient time has elapsed for final evaluation of the results of such treatment.

Hormonal Therapy — Hormonal therapy, not curative, does control symptoms as well as produce temporary regression of the disease in most of cases. Moreover, an increase in the life expectancy of almost all patients so treated is consistently observed. Nesbit and Baum[4] who have reported the largest series of cases thus far studied, noted five-year survivals in a significantly larger number of patients with inoperable carcinoma of the prostate treated by hormones, orchidectomy, or both, than among untreated controls. Following hormonal therapy, clinical improvement is often spectacular. An elevated serum acid phosphatase level may return to normal, the size and consistency of the prostate are usually so altered that rectal palpation reveals no gross evidence of tumor, strength is restored, and metastatic pain is relieved, thus enabling many patients to resume an active life.

There is still no general agreement as to the best plan of administration of hormones. Among the questions still unanswered are: Should hormonal therapy be instituted as soon as the diagnosis is made in patients without symptoms or evidence of metastases? Is estrogenic therapy most effective alone or in conjunction with orchidectomy? It might be said parenthetically here that relapse following use of one form of hormonal therapy may be temporarily counteracted by use of the other. Some prefer to start with oral administration of stilbestrol and reserve orchidectomy for use later but there is also some evidence to indicate that hormonal therapy combined with orchidectomy at the time the disease is discovered may result in longer survival.

The dosage of estrogen has also not yet been standardized. It was originally thought that the the daily dosage of stilbestrol should not exceed 5 mg. of stilbestrol but now as much as 45 mg. or more are being successfully given, particularly to those with advanced disease in whom smaller doses have been ineffective.

Recent observations suggest that tace may be as effective as stilbestrol and apparently causes fewer untoward reactions. It is also successful in some patients not responding to stilbestrol.

When estrogenic therapy is no longer effective, other hormones such as testosterone and progesterone have been employed in an effort to decrease the formation of the androgen stimulating hormone of the pituitary. Symptomatic improvement has been noted in a few patients during testosterone therapy as well as following discontinuation of therapy.

For patients whose disease is no longer controlled by estrogens or castration, cortisone has been recently employed, in an effort to minimize or abolish, if possible, the production of androgenic hormones by the adrenals. In addition, it produces a feeling or well being in the patient. Current opinion favors use of cortisone only after orchidectomy and in combination with estrogenic therapy.

The currently advocated daily dosage is 50 mg. in two doses. This drug should be discontinued gradually, since sudden withdrawal is fraught with danger. Cortisone therapy is contraindicated in patients with renal insufficiency, diabetes, peptic ulcer, tuberculosis, congestive heart failure, or psychoses. Dramatic symptomatic improvement has been noted following cortisone therapy in patients with advanced prostatic carcinoma but it is still too early to evaluate this drug accurately. So far, there has not been any convincing evidence that cortisone has favorably influenced metastases already present or delayed the formation of new metastases.

Total Bilateral Adrenalectomy has been tried by a number of clinical investigators recently, but has, so far at least, failed to control metastases or prolong the life of these patients, in the experience of most of these workers, even though the operation itself has proved entirely feasible and it has not been difficult to support life adequately afterwards.

SUMMARY

As with cancer in any other part of the body, in prostatic carcinoma recognition of the disease while it is still localized is imperative if complete cure by radical excision of the growth is to be effected. Unfortunately, we still see many patients whose disease is so far advanced that we can only hope to control their symptoms or at best retard progress of the disease by some form of palliative therapy. Irradiation and hormonal therapy are two forms of palliation which appear promising but whose ultimate value remains to be determined.

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Clinical Aids in the Diagnosis of Congenital Heart Disease

HOWARD H. NICHOLS, M. D.
Jackson, Mississippi

With the rapid progress being made in surgical treatment of congenital heart disease, it becomes more and more necessary to improve our diagnostic acuity in these conditions. Although many of the diagnostic procedures are available only at large medical centers, more careful use of the physical examination, routine roentgenograms, and ECGs will be of great assistance in the selection of patients for the more elaborate investigations. Since the physical findings of adults are familiar to all, it is advisable to consider the variations and problems of the physical examination of children.

The infant's heart is larger in proportion to the size of the chest as compared to that of an adult. However, the overall length from the base to apex may be only about 4-5 cms. Therefore accurate percussion of cardiac borders is very difficult. The chest wall is so thin that normal heart sounds and murmurs are widely transmitted, and therefore the character, location and transmission of murmurs do not have the same diagnostic importance as compared to adults. Functional murmurs are very common in infants and young children and may be difficult at times to be distinguished from murmurs of congenital anomalies. These are especially common in the newborn period and are thought to be associated with the flow of blood through the ductus arteriosus. Between the ages of 2 to 10 years, if one listens carefully, a functional murmur may be heard in about one-third of the children. These are most commonly heard at the apex and along the upper left sternal border in the recumbent position, and lack the blowing quality characteristic of organic murmurs. In general, a murmur may be said to be functional if it diminishes appreciably on changing the position of the patient—from supine to prone, e.g.—and if the presence of the murmur is the only abnormal finding. Functional murmurs usually decrease with increasing age. In infants, breath sounds are frequently confused with heart sounds and often the short, rapid respiratory excursions may sound like a systolic cardiac murmur.

The murmur of a congenital malformation of the heart is nearly always systolic in time when first observed during infancy. The intensity of the murmur depends primarily upon the relative pressure between the pulmonary and systemic circulations. When the pressure in the two circulations becomes equal, the murmur disappears; and therefore, the intensity is of little diagnostic assistance. One should not experience any security because of the diminishing intensity of a murmur as an infant grows older. This is usually due to a change in pressure between the two circulations. Diastolic murmurs are rarely heard under a year of age, and are very infrequent in congenital heart disease. The forcefulness of the heart sounds may be of importance. Although the heart sounds are usually louder, extremely loud sounds may indicate that the heart is laboring under great difficulty; thus being the first suspicion of a congenital anomaly before the development of a murmur or cardiac enlargement. Murmurs of acquired heart disease are usually differentiated by the history, age of the patient, and the conformity of the murmurs to the valvular areas.

The cardiac rate and character of the pulsations is important. A slow regular rate of 60/min. in a child, and 80/min. in an infant, should suggest the possibility of complete heart block. Excessively rapid rates of 140/min. or above in a child, or 160/min. or above in an infant, suggest cardiac failure or paroxysmal tachycardia. The comparison of pulsations between the upper and lower extremities is important. It is frequently difficult to palpate femoral pulsations in an infant. However, palpation above, as well as below, the inguinal ligament may prove fruitful. Weak or absent pulsations in the lower extremities suggest coarctation of the aorta. Wide variations in blood pressure between the upper and lower extremities should indicate the same. Normally this variation should be about 10 mm. systolic. Weak pulsations in both upper and lower extremities suggest aortic atresia. The pulse may also be weak in cardiac failure.

One should always palpate for the presence of a thrill which should be done over the entire precordium. The time of a thrill is important. Most thrills are systolic in time. A continuous thrill at the base should suggest a patent ductus arteriosus. A systolic thrill at the fourth left interspace should suggest a ventricular septal defect. At the first right inter-space or in the suprasternal notch, it is suggestive of aortic stenosis. Thrills are usually indicative of loud murmurs and represent a serious disturbance in the flow of blood.

Inspection of the chest with the eye at the level of the anterior chest wall may reveal a left-sided prominence which is due to enlargement of the right ventricle. When pressure from the right ventricle is sufficient to produce a left side chest deformity, it means that such a condition existed at a relatively early age while the bones were soft and pliable, thus distinguishable from acquired heart disease which appears at a later age.

Cyanosis and clubbing are suggestive of severe congenital anomalies. Usually cyanosis suggests an abnormal communication between the two sides of the heart and a mixture of a relatively large volume of venous blood with arterial blood. Slight cyanosis with a hemoglobin of 70 per cent is far more serious than a deeper cyanosis with a hemoglobin of 110 per cent. Cyanosis may appear from birth in the most severe conditions as truncus arteriosus or triloculare. In other types of cyanotic heart disease it may not appear until the second or third month and is usually associated with the closing of the ductus arteriosus. These infants may be noted to have cyanosis only on nursing or crying during the neonatal period. During the next few weeks, while the ductus remains patent, there is a physiological drop in the hemoglobin experienced by all infants during the neonatal period. With the closing of the ductus, there is a decrease in blood volume which reaches the lungs, and there results a compensatory rise in hemoglobin which renders cyanosis more apparent.

The rate and character of respiration in infants and children is the most sensitive index of cardiac decompensation. Although the normal respiratory rate of infants and children is faster than that of the adult, a rate of 50 or above suggests failure. The respiration is grunting in character and associated with lower intercostal retractions. Rales may also result from pulmonary congestion with or without failure.

Engorgement of the liver is usually an early sign of cardiac failure and usually appears long before rales of the lungs or edema of the extremities. Up to two years of age the liver may be normally palpated as low as two cm. below the costal margin.

The rate of growth and development is usually proportional to the severity of cardiac anomaly. Growth is greatly stunted in all types of cardiac disease associated with cyanosis and a severe degree of anoxemia. Infants with such conditions are usually of normal size at birth, but progress with relatively slow weight gains in face of normal or above normal caloric intakes. Failure to gain may be the first indication of congenital heart disease. However, an infant may experience a normal weight gain during the first or second month, before the development of cyanosis and anoxemia. On the other hand, anomalies as patent ductus or coarctation of the aorta may be associated with a normal rate of growth and development until puberty or teen age is reached.

X-ray and fluroscopic examinations offer valuable information regarding the cardiac size and its relationship to the great vessels. These diagnostic aids offer more tangible information and usually may be considered more accurate than our interpretations of the physical findings. Unfortunately, interpreting the findings of these examinations requires one with more than average knowledge of pediatric roentgenology. The fluroscopic examination has more to offer than the x-ray examination. The patient may be examined in any desired position, with better orientation as to what one is viewing. Artefacts produced by rotation of the body and head are thus eliminated. The older the patient, the more diagnostic is the fluroscopic examination. Although a few base lines may be established, little differential diagnostic information is obtained from fluroscopic examination of infants under six months of age.

In considering these examinations, it may be well to review some of the anatomical differences of the heart in infants and children as compared to adults. The main difference between adults and children is that in infants and children the chest is rounder, the diaphragm higher, and the vertical axis more horizontal than in the adult. In A-P position the right ventricle always lies anterior to the left ventricle. The left border of the cardiac shadow is composed of the pulmonary conus of the right ventricle, the margin of the right ventricle and the tip of the left ventricle. The right auricle is seen to right of the sternum. Above this the superior vena cava may project slightly to the right of the sternum. The aortic knob is not visible in infants as in older children or adults. In infants slight rotation of the patient may result in misinterpretation of a normal cardiac contour. The timing of systole and diastole causes considerable differences in the appearances of the cardiac silhouette. Thymus shadows are often to blame for misinterpretation of cardiac configuration.

Electrocardiography may be very helpful in the analysis of the various cardiac malformations but is seldom of diagnostic value. Axis deviation is indicative of the preponderance of one ventricular mass over the other, but gives no information as to the degree of ventricular enlargement. A right axis deviation indicates an additional load on the right side of the heart and is commonly present in cyanotic types of heart disease and auricular septal defects. A left axis deviation in a patient with cyanotic heart disease is rare, but when present indicates tricuspid atresia or gross underdevelopment of the right ventricle. Abnormal P waves are a frequent finding in cyanotic types of congenital heart disease and give information as to the size of auricles. Peaked or abnormally high P waves indicate enlargement of the right auricle and are usually seen in pulmonary stenosis, tetralogy of Fallot, and transposition of the great vessels. Notching or prolongation of the P waves indicates left ventricular enlargement and is seen in aortic stenosis, coarctation of the aorta, and occasionally in patent ductus arteriosus. Peaked or prolonged P waves are most frequently found in lead II. The P-R interval is usually normal in congenital heart disease, except occasionally in patent ductus or auricular defect. Prolonged P-R interval is usually indicative of rheumatic infections. T wave abnormalities usually are not found in congenital heart disease since these reflect the condition of the myocardium.

In general, the electrocardiogram does not make a diagnosis in congenital heart disease, but helps to confirm clinical impressions from the physical examination.

Other laboratory studies, as angiocardiography and cardiac catheterizations may be very helpful in establishing a diagnosis in the more obscure cases. They must not be considered a necessary part of the examination of every patient with congenital heart disease, and by no means should be reason for deemphasis of the physical examination, electrocardiogram and chest film.

SUMMARY

The variation of the physical findings of infants and children in congenital heart disease are discussed. Interpretation of some of the findings is mentioned, but the entire physical examination is stressed rather than the specific findings of specific congenital lesions. Some interpretations of the chest x-ray and electrocardiograph findings are also discussed.

Patent Ductus Arteriosus

GEORGE E. TWENTE, M. D.†
J. HARVEY JOHNSTON, M. D.†
Jackson, Mississippi

Although Munro in 1907 first suggested the possibility of obliterating a patent ductus arteriosus, the first successful ligation was reported in 1938 by Gross and Hubbard. This event marked the beginning of the expansion of the field of cardiac surgery. Many large series of cases of successful surgical procedures for this congenital anomaly have been reported with very low mortality since that time.

Pathology

The basic congenital anomaly represents the failure of the ductus arteriosus, which allows the blood flow to by-pass the pulmonary circulation in intrauterine life, to close normally as it should after birth. In those cases in which it remains patent a shunt is formed between the pulmonary artery and the aorta. (Fig. 1) Because of the greater blood pressure in the aorta than in the pulmonary artery, the blood flow through the shunt is from the aorta to the pulmonary artery, in contradistinction to the prenatal flow which is from pulmonary artery to aorta. There is a tremendous deflection of blood from the aortic or systemic circulation to the low pressure of the pulmonary circuit and thence to the left heart. The shunt of a patent ductus creates a vicious cycle of ineffective blood flow which greatly burdens the left ventricle to the point of eventual failure. This useless circulation has been aptly labeled a "parasitic circulation." It has been shown that the shunt of a patent ductus arteriosus increases the work of the left heart five fold. Work hypertropy, dilatation, and cardiac failure are to be expected.

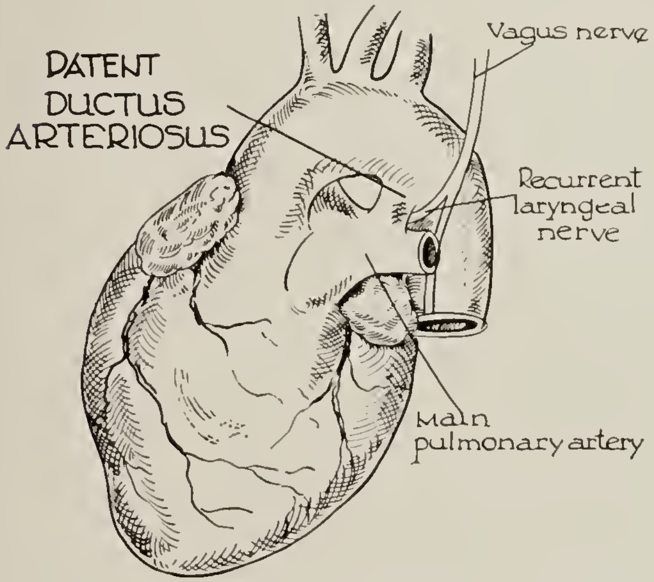

Fig 1 (After Gross) Diagrammatic representation of patent ductus arteriosus showing location of abnormal shunt between aortic and pulmonic circulation.

Because of the shunt, the effective flow through the systemic circulation may be so diminished as to interfere with growth and development. Bacterial endocarditis, usually due to streptococcus viridans infection, is frequently super-imposed on the open ductus; this complication is most often seen in the third and fourth decades.

Clinical Findings

The condition occurs more often in females, (70 per cent). Early in life, the patient may have few or no symptoms of cardiac embarrassment, but later, he may be decompensated to the point of invalidism. Physical development may be retarded in a small but important percentage of cases. Cardiac decompensation usually comes on later in life and is accompanied by dyspnea, and easy fatigue. Cyanosis is not a symptom unless there is severe cardiac failure with reversal of blood flow through the ductus.

The systolic blood pressure is usually normal for size and age but the diastolic pressure is depressed to 40-50 mm. of hg.

A characteristic "machinery" murmur, continuous throughout both systole and diastole and accentuated in systole, is heard in the second or third interspace to the left of the sternum. The murmur may be transmitted to the left accompanied by a thrill which can be felt over the precordium.

Diagnosis

Ninety-five per cent of cases can be diagnosed on physical findings alone, the "machinery" murmur being distinctive. Electrocardiography is of help in a few cases, primarily in excluding cases with other cardiac lesions. Blood pressure readings show a depressed diastolic with widened pulse pressure.

Cardiac catheterization can give a reasonably accurate estimate of the size of the shunt, but is rarely necessary in the usual case. Its use is necessary in only a small number of cases with obscure abnormalities.

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† The Surgical Clinic, Jackson, Mississippi

X-ray studies help often in the diagnosis. The heart is slightly or moderately enlarged, the left chamber being predominant; there may be increased fullness of the hilar shadows. Half the cases may show "hilar dance." Oblique films may show left auricular enlargement, best seen with a barium fill esophagus.

DIFFERENTIAL DIAGNOSIS

The condition may be difficult to diagnose in infancy because there may be little flow through the shunt early in life only to increase later on with more marked symptoms. Aortic septal defects are fortunately rare for they simulate patent ducti so closely that clinical differentiation is usually impossible. In interventricular and interauricular septal defects, the murmur is more centrally located and limited to systole. In pulmonary stenosis the murmur is limited to systole and is accompanied by right preponderance on electrocardiograms and x-rays.

PROGNOSIS

Although an occasional patient with a patent ductus enjoys a normal life, the majority present some complications as retarded physical growth, bacterial endocarditis, cardiac decompensation, or rupture of dilated ductus. Keys and Shapiro state that subjects alive at seventeen years of age with a patent ductus have only longevity of one half that of the normal population.

TREATMENT

Absolute indications for surgery are arrested development, cardiac failure, or prolonged fatigue in adult life without cardiac failure. Infected cases should be given intensive courses in antibiotic therapy followed in several months by surgery. An obliteration of a patent ductus has become such a standardized and safe procedure, surgery should be advised in all cases because of uncertainty of future complications if allowed to progress.

CONTRA-INDICATIONS

Patients with cyanosis and symptoms of patent ductus should never be closed because either the patient is in cardiac failure or the ductus is acting as a compensatory mechanism for other cardiac anomalies.

Surgery can be performed at any age, but preferably after the age of two years, since the diagnosis may be difficult to make prior to that time. The optimum age seems to be in childhood (4-12 years) for the ductus is more elastic and technically easier to ligate or divide, and the stage of complication can usually be avoided.

Technically we approach the ductus through the fourth left interspace using a posterolateral incision. The mediastinal pleura is opened longitudinally between the left phrenic and vagus nerves which are retracted. The ductus is isolated by identifying the recurrent laryngeal nerve which curves beneath the ductus prior to ascending. (Fig. 1) The ductus is cleaned of adventitia beginning on the aortic side, doing most of the dissection from the aortic side and below. As the pulmonary artery side is approached a lapet of pericardium will be found anterior and superior to the ductus which must be dissected medially. After freeing the ductus well, a No. 1 black silk suture is passed beneath it and the ductus is temporarily occluded. The anaesthesiologist records the changes in pulse and blood pressure; if no untoward changes are noted, the ductus is occluded by ligation with this suture. A No. 00 black silk suture is then placed well on the aortic side as a purse string and one is likewise placed on the pulmonic side. One or two transfixion sutures are applied between making a multiple ligation with four to five sutures. At this time the thrill should be absent from the ductal as well as from the pulmonary artery. The parietal pleura is closed with interrupted sutures. Streptomycin and aqueous penicillin are instilled into the chest, which is closed in layers with air intercostal drainage tube for water-seal drainage.

Postoperatively nasal or tent oxygen is given for 8 to 12 hours. The intercostal tube, if used, is removed in 24 hours. The patient is allowed up on the second or third postoperative day.

Following surgery the thrill and murmurs disappear. The diastolic pressure rises and the precordial pulsations become less marked. Later the cardiac size diminishes and the rate of body growth, if retarded, is accelerated.

Although Gross and others feel that ligation should be discarded in favor of division and suture of the ductus, most thoracic surgeons agree with Blalock who has had only one recanalization in over 700 cases treated by suture ligation. Although Gross reports no fatalities from hemorrhage in his series, we know of excellent men who have lost patients during division of the ductus from uncontrolled hemorrhage. In the hands of the average thoracic surgeon, suture ligation and not division is the procedure of choice.

We have operated on eighteen patients with patent ductus in the past three years. Seventeen survived operation and are apparently cured. There was one death, which is reported, for it seems unquestionably to be a death due to complications of the open ductus and not to surgery.

B. H. Nineteen-year-old colored female who had had episodes of congestive failure for three years. Attempted ligation elsewhere one year previously had been abandoned because of hemorrhage. Three months prior to admission subacute bacterial endarteritis developed.

Although the patient was in mild failure with some cyanosis of the nail beds and lips, operation was advised as a "last ditch" procedure for it was obvious that the open ductus could be tolerated little longer. The ductus was successfully ligated without mishap, but the patient died in the postoperative period of cardiac failure.

The ages of the patients varied from 2 to 41; five were 29 or over. Experience with this latter group makes us urge surgery for the open ductus in childhood, for the technical problem is so much easier then.

The only complication other than the reported death has been transitory hoarseness in two of the patients with larger ducti requiring more difficult dissection and more trauma to the recurrent laryngeal nerve.

Summary

The authors record their experience with 18 patients with patent ductus arteriosus treated surgically. Seventeen are cured of the open ductus; one fatality due to complications of long standing disease is recorded.

Addendum

The authors wish to thank and give full credit for the valuable assistance in the above cases rendered by Drs. J. P. Melvin, Manning Hudson, Thaddeus Labecki, Howard Nichols, Curtis Caine, Harvey Garrison, Jr., and others. Certainly the management of these cases was a "team project."

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Random Thoughts on Abruptio Placenta

WALTER H. SIMMONS, M. D.
Jackson, Mississippi

Hearing this title, one might wonder what order, if any, such a presentation will have. Perhaps, tonight, I am not quite sure but I am certain it will not begin with definition, run through incidence, pathology, etc., and end with treatment. While, admittedly, that's the best way to learn it, we all learned it once. No attempt is made to cover all aspects of abruptio placenta. This paper deals chiefly with some controversial points and some unanswered questions. My thinking was that this end could best be attained by first giving case presentations and then discussing the relevant parts.

The three following case reports are all of patients admitted to St. Dominic's Hospital:

CASE NO. 1

Mrs. G. was a 26-year-old, white, primigravida whose crisis occurred at 37 weeks gestation. One week previously, at exactly 8 months pregnant, she noticed a very slight spot of blood. At this time there were no associated symptoms and it was passed off as unimportant. One week later (and one day before her accident) she was again seen in the office when there were signs of mild toxemia. Her weight gain had been a little excessive, there was slight albuminuria and she had a mild hypertension. She was advised to take the usual precautions of less carbohydrate, fats, and salt, and more proteins and rest. The next day she experienced sudden, severe abdominal pain. She was seen immediately in the emergency room when she had a full-blown toxemia, intractable abdominal pain and the textbook board-like uterus. There was no bleeding and the fetal heart tones were normal. A diagnosis of partial but severe premature separation of the placenta was made. She was given blood and, under spinal anesthesia, a low cervical cesarean section was done. The baby was alive and the placenta revealed an estimated 25 per cent separation with about 500 gms. retroplacental hematoma. There was very little extravasated blood in the myometrium and the implantation site was normal. Recovery was uneventful.

This case, as you have seen, represents severe, partial premature separation of the normally im-

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* Presented at the regular staff meeting of St. Dominic's Hospital, Jackson, Miss., 9 March 1954.

planted placenta with "concealed hemorrhage" and toxemia.

CASE NO. II

Mrs. B., a 25 year-old, white, multipara was 32 weeks pregnant. She came to the office with recurrent abdominal cramping "like labor pains" of 2 hours duration. There were no signs of toxemia, no bleeding and the fetal heart tones were good. A diagnosis of "false labor" was made when she was sent home with instructions to get off her feet, take stilbestrol, 25 mgs. q.i.d. and paregoric, p.r.n. Before she could get home her pain was so intense she was incapacitated and had to be taken to the hospital. In less than an hour after I had seen her in my office her condition had become serious. She was in moderate shock, had severe pain and the uterus was board-like. There was no bleeding, no sign of toxemia and no F.H.T. could be heard.

A diagnosis of complete premature separation was made. She was given blood and her membranes were ruptured. She went immediately into effective labor and four hours later, under saddle block, she delivered a stillborn child. Approximately 1000 cc. of clotted blood was expelled immediately after the placenta. Her recovery was prompt and uneventful.

This represents complete premature separation of the placenta with concealed hemorrhage but no toxemia.

CASE NO. III

Mrs. S., gravida II, para I, gave more forewarning of her impending crisis. Her expected date of confinement was 2 January 1954. At 5 a.m., 8 December 1953, she awakened to find herself "lying in a pool of blood". There was no pain. She was admitted to the hospital when she was still bleeding slightly. Except for anemia and the apparently normal seven-month gestation, laboratory and physical findings were normal. Fetal heart tones were good. Bleeding stopped within 2 or 3 hours. She was given 2 pints of blood and kept in the hospital for observation for 3 days. The tentative diagnosis of placenta previa, degree undetermined, was made and she was sent home with a full explanation and understanding of the potentialities of her condition.

No pelvic examination was done at this time for fear it might incite bleeding and force termination of pregnancy. At seven months, viability of the child was questionable. Ideally, under such circumstances, the patient should remain in the hospital until termination of pregnancy. However, as they usually do, financial considerations prohibited such a hospital stay. The advantages of a few additional weeks intrauterine life for the baby outweighed the calculated risk to the mother and she was instructed to remain watchfully at home except for her office visits.

On 11 January, now within 3 weeks of term, Mrs. S., again had extensive painless bleeding. Admitted to the hospital her bleeding slowed to a trickle. The hemoglobin was 10.5 gms. and she was given one pint of blood. Now that the baby had certainly reached viability, plans were made to do a sterile vaginal examination as soon as her blood had been built up to a reserve sufficient for any likely loss. Before this, however, her membranes ruptured spontaneously and within minutes she was bleeding profusely and in constant, severe pain.

The uterus became "board like" and soon she was in shock. The F.H.T. were so distant the rate could not be counted. Pure oxygen was immediately given while preparations were made for simultaneous blood transfusions and the operating room. A sterile vaginal examination showed the cervix to be fully effaced and 3 cms. dilated. No placental tissue was palpable. The diagnosis was partial, severe premature separation of a normally implanted placenta. Under spinal anesthesia, a low cervical section was done. The baby survived and the placenta was found to be 75 per cent separated. There was estimated 1000 cc. retroplacental blood and moderate extravasation of blood had taken place into the myometrium ("uteroplacental apoplexy" or "Couvelaire uterus"). With additional blood transfusions, recovery was uneventful and she was discharged on the sixth postpartum day.

Discussion

In reviewing the literature since 1938 on this subject there is surprisingly little that is new. Bartholomew and his group did some original research to claim a common etiology between abruptio placenta and toxemia of pregnancy. According to these investigators an unknown spasmogenic factor probably produces the following sequence: 1) obstruction of fetal blood from the outflow of placental tissue; 2) distention and thrombosis of villous vessels with resulting enlargement and crowding of villi; 3) diminution of maternal and fetal blood supply to villi; 4) local necrosis; and 5) dissemination of toxins into the maternal blood stream.

It has long been known that some cases of severe abruptio placenta show failure in the blood clotting mechanism as manifested by frequent postpartum hemorrhage. Indeed, this accounts for most of the fatalities and research among several groups may prove the necessity for readily available fibrinogen* in all hospitals.

The need for a universally accepted classification is most apparent in the literature. While one speaks of "toxic and non-toxic" cases, another classifies them "mild, intermediate and severe" and, yet another, "partial and complete".

This latter seems best to me and it is the one used here. Partial premature separation is four to six times as frequent as the complete separation, is obviously less serious to mother and child, is frequent *during* labor and rarely associated with toxemia. Many cases of mild intrapartum bleeding will be found to be slight partial separations if the placenta is carefully examined after it is expelled. In these patients areas of old, dark blood as small as one or two cms. around the periphery of the placenta can commonly be found. Counting all such cases the total incidence of abruptio placenta will surely be higher than the usually quoted 1 per cent of all deliveries. It is generally accepted that the partial separation rarely goes to complete separation. Bartholomew's work strengthens this view in that he implies whatever part of the placenta is destined to separate had focal necrosis in the first place and healthy placental tissue would remain intact. While such a view is comforting to one managing a given case I believe this is not always true. Consider the first and third cases presented here. One showed 25 per cent separation and the other 75 per cent. Both had symptoms of separation of less than two hours duration and, except for the presence of fetal heart tones, both had the findings of complete premature separation. The fact that one had concealed hemorrhage and one had overt hemorrhage does not weigh against this. Indeed, the concealed hemorrhage generally gives the proper prognosis because of extravasation of blood into the myometrium with resultant damage to the uterus. In both these cases surgery was done in the belief that the separating process was a progressive one and in the hope that the baby could be extracted before the process was complete. Let me make it clear, however, certainly I do not advocate cesarean sections in all cases of partial or complete separations. Far from it. I feel that surgery is indicated in a very few. The great majority of those mild cases referred to above require no treatment or perhaps simple rupture of the membranes and possibly small doses of pitocin. They do require very close observation for symptoms of progression of the condition—tonic (rather than rhythmic) contractions, constant (rather than intermittent) abdominal pain, hard, tender uterus and signs of blood loss, whether it is external or not. The chief cases where the cesarean operation should be considered are those thought to be progressive and patients with complete separation where the cervix is long and hard, indicating delivery is not imminent.

While fetal mortality is now about 20 per cent it has come down somewhat in the past 15 years and maternal mortality reduced from four or five per cent to below one per cent. This is due chiefly to readily available blood and to the generally accepted fact that vaginal manipulations, except for rupture of the membranes, should not be done. In rare cases, scalp traction by Willett's (or Allis) forceps may be beneficial but there is no place for forceful dilation of the cervix, Braxton-Hicks version, packing and bags.

At first thought, one might think rupture of the membranes would be harmful. And for the first few minutes afterwards this may actually be true. It would seem that the counterpressure exerted by the bag of waters would, at least, have some hemostatic effect and therefore the loss of this pressure would encourage more bleeding. This effect, however, is more than overcome when the myometrium contracts. Not only is benefit derived by the uterus adjusting itself to its new contents, but with the individual fibers contracted, it permits less extravasation of blood into the myometrium. More important still, it initiates or hastens the process of delivery.

The use of spinal anesthesia in abruptio placenta is certainly controversial. For years we have heard that spinals, including saddle block, were contraindicated in any bleeding of late pregnancy. The argument here is twofold. The first is that, causing vasodilatation, it is conducive to more bleeding. While this, I think, is conjecture, the other reason of lowering the blood pressure is more valid. Simply stating it, I just have not noticed any more bleeding from spinals than from any other anesthetic. A drop in blood pressure is a real danger in any condition where blood loss is the very essence of the pathology. This points up the extreme importance of adequate replacement of blood at the earliest possible time. Shock not only obviously endangers the mother but furthers the baby's anoxia, too. On the other hand, we are often dealing with a premature baby where spinal anesthesia offers a very real advantage by not suppressing its respiratory mechanism. As in most every other aspect of medicine the case must be individualized but my practice is to use a spinal unless there is a very definite contraindication. Certainly ether should never be used. Here, one needs only to be reminded how relatively easy it is to do a version in a uterus so completely relaxed by deep ether anesthesia.

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* Now commercially available in 1 gm. units as paranogon (Cutter).

Formerly the Porro operation, or cesarean hysterectomy, was the accepted procedure when there was moderate or extensive extravasation of blood into or through the uterine wall. Experience has shown, though, that somehow nature takes care of this condition better than would be expected. As a result, removal of the Couvelaire uterus is now rarely done. Again, individualization is the key-note. Surely, very serious thought should be given to the patient who has one or no living children before her reproductive power is taken from her.

CONCLUSIONS

Three case reports of abruptio placenta are presented. There is a brief discussion of several controversial aspects of the condition.

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Intra-oral Carcinoma

W. C. SHANDS, M. D.*
Jackson, Mississippi

INTRA-ORAL carcinomas include carcinomas arising within the area from the tonsillar pillars posteriorly to the lips anteriorly. The classification of the exact anatomical site of origin of the primary tumor is of importance because of the differences in growth and response to treatment of carcinomas in different intra-oral sites. The primary sites which are considered include the tongue, gum, the floor of the mouth, the buccal mucosa, the palate, and the tonsil.

Chronic irritation is of great importance in the etiology of these tumors. The duration of time in which the irritant is active is believed to be more important than the nature of the irritant.

Recently, there has been renewed interest in the etiological role of chewing tobacco and snuff in the development of these tumors. In the South, snuff is used commonly intra-orally and is usually held in the gingivobuccal gutter. Thirty-six patients of a series of one hundred and twenty-four patients with intra-oral cancers seen at the M.D. Anderson Hospital of the University of Texas at Houston had used snuff habitually within their mouths.

Although the great majority of these cases in most series occur in men (80 to 90%), a higher percentage of cases is found in females who are heavy users of snuff than among women who use no tobacco intra-orally.

Luetic glossitis is an important precursor of cancer of the tongue and occurs in twenty per cent or more of all male patients with this disease. Syphilis is less obviously an etiological factor in cancers of the other intra-oral sites, although an incidence of twenty per cent has been reported in patients with carcinoma of the buccal mucosa.

The incidence of previously existing leukoplakia in the mouths of patients who develop intra-oral cancers has varied from twenty-two to seventy per cent in different series. Patients with leukoplakia should be examined frequently by inspection and palpation for evidence of the development of carcinoma. All persistent and thickened areas of leukoplakia should be biopsied.

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*The Surgical Clinic, Jackson, Mississippi

A representative biopsy with accurate pathological study is the only final basis of diagnosis, although many of the lesions may be recognized on clinical ground from inspection and palpation. Pain and tenderness are rarely early symptoms in cancer of the mouth unless secondary infection has supervened. In the posterior part of the oral the primary lesion rarely produces symptoms until it is several centimeters in size.

The great majority of cancers of the mouth are squamous cell carcinomas. Adenocarcinomas may arise from intra-oral minor salivary glands. Transitional cell carcinomas, lympho-epitheliomas, and lymphosarcomas occur in the posterior oral cavity. Melanomas are rare, although three melanomas of the gum were seen in a series of two thousand cancers of the head and neck.

Regional nodal metastases are common with these lesions. Forty per cent of all patients with carcinoma of the tongue have cervical nodal metastases at the time that they are first seen, and another twenty-five to forty per cent will develop cervical nodal metastases during their period of observation. Thus, approximately seventy per cent of these patients will require therapy for cervical nodal metastases in order to control their disease. The percentage of patients with cervical nodal metastasis is less with carcinomas of the other primary intra-oral sites, but the probable area of spread must be carefully considered and watched in every instance.

The metastases from these tumors tend to remain localized to the area above the clavicles for relatively long periods of time. In some series only ten to eighteen per cent of patients expiring from these cancers exhibited distant metastases. Death in these cases of uncontrolled mouth cancer usually occurs from sepsis, hemorrhage, respiratory obstruction, and malnutrition.

The tendency for delayed distant metastasis in these cases is an encouraging factor in the more aggressive therapy of these tumors and their regional nodal metastases. With surgical means, this has been possible in the last fifteen years because of improvements in anesthesia, the increased availability of blood, and new chemotherapeutic and antibiotic agents. Radical neck dissection has been the therapy of choice in dealing with cervical nodal metastases. Complete unilateral radical neck dissection is superior to partial dissections in treating cervical nodal metastases from intra-oral cancer. Prophylactic radical neck dissections are employed infrequently, particularly when careful and repeated follow up examinations of patients are possible. In cancers with extremely poor prognosis, as in intra-oral melanomas, prophylactic neck dissection may be justified.

Radical neck dissection combined with wide surgical removal of the primary tumor is the "commando" or composite operation. The term "commando" first arose in the Crimean War and signified joint land and sea operations. In the therapy of intra-oral cancer, the commando operation signifies radical neck dissection combined with surgical removal of the intra-oral cancer. Bone involvement makes resection of the involved mandible or maxilla necessary because radiation will not control cancer present in either bone. In the commando procedure, the neck dissection is ordinarily performed first, followed by the intra-oral attack. In the "pull through" type of operation, the mandible is not divided and the intra-oral primary tumor and a margin of surrounding tissue are removed from below. Marginal types of resection of the mandible are sometime performed with this operation.

A temporary tracheostomy is performed in all cases in which the bony continuity of the mandible is sacrificed, in all cases with a second radical neck dissection and after a radical neck dissection following intensive irritation.

An increased salvage has been obtained with these newer procedures although the anatomical limitations of wide dissection within the mouth remain a great problem. Reconstructive surgery after one year is possible in some instances since most recurrences come within this period. Bone grafts may be employed to restore the continuity of the mandible.

Irradiation therapy, both interstitial radium therapy and external irradiation, have made great strides in recent years. The carcinomas of the soft palate, tonsil, and posterior tongue have been treated most successfully by radiation. The grid therapy of external radiation has been revised with much apparent success in dealing with these lesions.

The low intensity radium needles have been used most successfully by the Manchester group in England. Patterson and Parker have devised a system of interstitial radium implantation which is very accurate. After implants are performed in a geometric pattern which covers the carcinoma and a margin of ten to twenty per cent of surrounding tissue, the dosage of the implant is calculated from x-rays of the actual implant. For most squamous cell carcinomas in the oral cavity, seven thousand roentgens are the tumor dose to be delivered. Higher dosages will result in radionecrosis in some instances, and lower dosages will usually not sterilize all the tumor cells. The tumor dose is usually delivered in five to seven days, and the needles are removed at the time that the calculated dose is delivered. Intratracheal anesthesia is used for all interstitial radium implants within the oral cavity. The Quimby tables may be used to calculate the dosage from needles considered as linear sources. The Patterson system, however, has greater accuracy where a reasonable geometric pattern in implant can be obtained.

Various anatomical sites may be considered as illustrative of the use of both surgery and radiation. In smaller floor of the mouth lesions, volume implants with low intensity needles through the dorsum of the tongue may be used. Larger lesions, however, have usually invaded the mandible and a jaw resection is required.

Carcinomas of the tip of the tongue are best treated surgically, but carcinomas of the lateral border of the tongue may be treated successfully with one or two plane radium implants. The impairment occasioned by partial glossectomy is obviated in these cases.

Carcinomas of the retro-molar may be treated entirely by tongue pterygoid radium implant, or if the x-rays of the implant reveal a poor pattern, this may be supplemented by external radiation therapy.

Certain buccal mucosal carcinomas may be treated by a one or two plane radium implant. Where this may be successfully employed, long hospital stay for reconstructive surgery may be avoided.

Carcinoma of the hard palate and carcinoma of the upper gum invading the maxilla require surgical removal. The floor of the maxillary antrum ordinarily must be removed in these cases and a dental prosthesis may be worn which will occlude the opening into the antrum, thus allowing phonation and normal eating.

The adenocarcinomas are not usually sufficiently radiosensitive to be treated by radiation therapy. Radiation therapy not accurately administered may lead to radionecrosis which may be as devastating as the primary disease.

Combined surgical and radiation therapy has definite merit in many instances. Surgery is superior in dealing with cervical nodal metastases and is essential in patients with bone involvement. Contralateral nodal metastases occur frequently in cases of carcinoma of the tongue and midline carcinomas and fairly often in entirely unilateral primary intra-oral carcinomas. Multiple intra-oral carcinomas are seen frequently. The entire oral cavity and both cervical regions must remain under careful scrutiny once the treatment of a patient with intra-oral cancer is undertaken.

Earlier diagnosis and more aggressive therapy, both surgical and radiological, will yield increasing cure rates in these cancers.

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The Evaluation of a Cardiac Patient for Intended Surgery

JOSEPH P. MELVIN, JR.
Jackson, Mississippi

WHEN THE internist is called to evaluate a cardiac prior to its trip to the operating room, he assumes five or possibly six responsibilities instead of one. The study of the patient should include the answers to the following questions:

1. "Is there heart disease at all"? This may sound silly or even ridiculous when one recalls the title of this paper. Yet most physicians at one time or another have come across patients who simply on the basis of the presence of a murmur, have been considered as cardiacs and may be suffering from pure iatrogenic (physician induced) heart disease and nothing else. Anemias and many other causes of functional murmurs may present no true hemodynamic derangement whatsoever. It may not be truly cardiac disease.

2. "Is there a surgical problem"? Many authorities in the past have recognized the association of cardio-pulmonary diseases as imitating signs and symptoms of intra-abdominal infections. Levine mentions two patients who developed acute epigastric pain with marked epigastric tenderness and at autopsy both showed extensive anterior myocardial infarction. This is a common occurrence to all people who try to screen patients for surgery and as a matter of fact, there is hardly any active surgical clinic that has not made the error at one time or another in exploring the abdomen when the cause of the epigastric pain, vomiting and collapse, was a myocardial infarction. Such diagnoses as perforated peptic ulcer, acute pancreatitis, acute gallbladder disease, diaphragmatic hernia, acute intestinal obstruction and others are made when the heart is not suspected or even investigated. The previous history of angina, radiation of the pin from the epigastrium to the retrosternal area or to the upper extremities, the presence of dyspnea and cyanosis should all direct the attention toward the heart even if the patient's incriminating finger points toward the abdomen. The electrocardiogram will give invaluable information, bearing in mind that changes may not occur early after an attack. Similarly, there are occasions when acute congestive heart failure can closely imitate an acute surgical condition of the abdomen. This may occur with a sudden onset of auricular fibrillation, especially in a previously undigitalized heart. If mitral stenosis is present, acute pain and rigidity in the epigastrium or right upper quadrant, slight fever and leukocytosis, nausea and vomiting and even slight jaundice may result from the acute congestive failure. There is usually no great haste about surgery in these cases and a therapeutic decision is usually reached if the heart is kept in mind. In younger patients, acute pain in the abdomen resembling that due to acute appendicitis may occur in rheumatic fever and may be accompanied by nausea, tenderness in the right lower quardrant, vomiting, slight fever and leukocytosis. Subsidiary evidences of rheumatic infection such as epistaxes, past history of rheumatic fever or rheumatic heart disease, a pericardial friction rub, the detection of EKG abnormalities certainly point toward rheumatic fever as a likely diagnosis. Another circulatory disturbance that produces symptoms imitating an acute surgical abdomen is mesenteric embolism. This should be particularly thought of when auricular fibrillation, mitral stenosis, recent myocardial infarction, or bacterial endocarditis exists.

3. "Is the prognosis with surgery worth the risk involved"? The answer to this question, basically whether the patient with a particular type of heart disease is going to live long enough to enjoy the results of surgery, will require good judgment. The operations which in themselves help the impaired circulation are always better borne and will be more beneficial in their end results, and there is a direct relationship between this surgery and the cardiac condition. For instance, a patient with rheumatic heart disease, auricular fibrillation or hyperthyroidism in advanced heart failure will certainly show marked improvement in the heart following a subtotal thyroidectomy. It would be unwise in such a case on the other hand to advise an operation for herniorrhaphy and expect very good results as far as improvement of cardiac function is concerned.

4. "How can I estimate the risk"? One cannot over-emphasize the folly in basing an opinion

on what is heard over the heart by the use of the stethoscope. Marvin has stated it aptly when he commented: "No matter what size the heart may be, no matter what thrills or murmurs may be present, and no matter in what direction they are transmitted, if the patient is leading a life of moderate activities and symptom free, the heart may be regarded as the equivalent of a normal one and it may be safely assumed that it will behave properly during operation and anesthesia." That statement emphasizes the fact that exercise tolerance and the ability of the heart to withstand the rigors of a normal life is far more important than the noises heard with the stethoscope. The ability of the heart to respond to effort should be investigated carefully and the history must be directed as to discover positive findings, as to the number of flights of stairs that can be climbed, the distance walked on level ground, ability to tolerate hill climbing, etc. Any chest pain should be carefully investigated as to its location, radiation, characteristics, duration, relation to effort, position, mode of onset and disappearance in order to be quite sure that angina does or does not exist. An electrocardiogram *per se*, unless it shows an acute myocardial infarction—almost unheard of as an unsuspected finding—is not of first importance and such exotic instruments as the ballistocardiogram are absolutely worthless in evaluating the patient in his ability to withstand surgery.

Thus, having gathered all this information about the patient we can try to classify him according to the criteria of the New York Heart Association (1 thru 4) on a functional basis, as we do all the cardiacs on the wards and in the clinics. It would certainly be folly to evaluate risks on a percentage basis and state that such an individual, for instance, has a 15 per cent chance of surviving a contemplated procedure. One should recognize the fact that some hearts are liable to so-called "accidents" of heart disease. These are the unpredictable complications, such as acute coronary thrombosis, embolism, sudden arrhythmias, bacterial endocarditis and sudden death in the presence of aortic stenosis, severe coronary disease and syphilitic aortitis. Fortunately, such post-operative complications are seldom seen.

5. "What diseases absolutely necessitate surgery even in the presence of severe cardiac disease"? Notable examples are: 1) malignant disease in which clinical evidence supports the fact that there is a reasonable chance of cure by operation, 2) acute appendicitis, 3) gangrenous or suppurative cholecystitis, 4) perforating lesions of the viscera, 5) strangulated hernia, 6) obstruction of the common bile duct, 7) obstructing enlargement of the prostate gland, 8) ovarian cyst with torsion of the pedicle, 9) intestinal obstruction, 10) hyperthyroidism, 11) various forms of trauma requiring immediate surgical attention, 12) ectopic pregnancy, 13) obstructing renal calculi, 14) mesenteric thrombosis or embolism, 15) unilateral renal disease as a possible cause of hypertension.

6. "How can we improve the risk of this patient"? This may be stated quite simply: Get the patient in as good condition as possible before surgery. This by its very simplicity requires the avoidance of surgery during the first six or eight weeks following an acute myocardial infarction. All surgery, if possible, should be delayed until a compensated state has been reached with digitalization, sodium restriction, use of mercurial diuretics, etc., the speed of which should be regulated by the urgency of the operation. Digitalization, when possible, of cases of auricular flutter and fibrillation prior to surgery is mandatory as many factors may cause an abnormal increase in the ventricular rate during or after surgery, precipitating cardiac decompensation. Prophylactic use of "soothing" cardiac drugs, such as quinidine or procaine amide in those patients with a history of paroxysmal tachycardias of various types, may be recommended although no definite objective proof of their efficacy can be produced by a review of the literature. Pulmonary infections should be assiduously treated and cleared prior to surgery as cardiac disease, pulmonary infection, anesthesia and surgery form an ominous tetrad, productive of the very worst surgical result.

I suppose it would be impertinent for an internist to fail to admit the success of any operation, especially in a cardiac, depends on the choice of a skilled surgeon and if possible a competent anesthesiologist. Each should be experienced and versatile enough to adapt himself to any sudden change requiring a rapid decision and this may mean life rather than death to the patient. The anesthetist should be an expert in the induction and maintenance of a smooth, effortless anesthesia. The surgeon should think fast and have the utmost respect for the patient's tissues, particularly when dealing with the brittle tissues of an old cardiac. Careful follow-up during the postoperative period with its attendant dangers of postoperative shock, coronary occlusion, myocardial infarction, pulmonary embolism and pulmonary edema is quite important. Frequent use of the electrocardiogram to elucidate unexplained postoperative symptoms may be mentioned and careful attention not only to the type of intravenous fluid but to the amount of fluid received postoperatively is of great help to the patient. The special frequency of phlebothrombosis and pulmonary embolism among patients with heart disease suggests the importance of using anticoagulants postoperatively as well as other prophylactic measures such as early ambulation, good exercises, antibiotics, breathing exercises and frequent positional changes. All postoperative complications are treated as if no surgery has taken place unless, of course, it may interfere with important postoperative orders.

In closing I think it would be quite applicable to quote from A. J. Oschner who stated in 1901 that, "I think it would be unfortunate should surgeons receive the impression that patients suffering from heart disease are especially safe. I believe they are because they are considered especially unsafe".

Recent Trends in Geriatrics

Wm. E. LOTTERHOS, M. D.
Jackson, Mississippi

I. INTRODUCTION

Geriatrics, pronounced jerry-AT-ricks, is derived from two Greek words meaning healing of the old. It truly is that part of medical science and practice concerned with the health of the aging and aged. Geriatrics deals with the medical problems of normal aging and aged people, as well as their illnesses, both mental and physical. Senescence or normal aging is a geriatric problem as is senility, or abnormal aging.

In terms of medical practice, geriatrics is not a specialty like obstetrics, orthopedics and others, based on anatomic limitations or therapeutic technics. It is, actually, a point of view or attitude of mind alert to the processes and consequences of aging, senescence and senility. Because of this geriatrics embraces all of the specialized fields of medicine and is preferably referred to as geriatric medicine.

II. STATISTICS

Spectacular gains in longevity have been made in the United States since the dawn of the twentieth century when average length of life was 49.2 years. In 1945, for example, average length of life was 65.8 years, having increased 16 years in less than five decades. At present, the average life expectancy is 68 years.

In this connection the American physician, according to a study covering the five-year period, 1938 to 1942 inclusive, the average male physician entering his profession at age of 25 has 43½ years of life before him. Upon reaching 35, the physician still has almost as many years remaining as he has already lived. At age 45, the average physician may expect to live an additional quarter century; at 65 he may still look forward to almost 12 years of life. Women physicians start out with an advantage of 3½ years over the men at age 25, but this margin is reduced to less than 1½ years by age 65.

The average age of physicians who died in 1947 was 66.7 years. The four leading causes of death among physicians in 1947 were heart disease, cerebral accidents, neoplasms, and arteriosclerosis.

Growing medical interest in geriatrics has been stimulated by knowledge that we are becoming a nation of middle-aged and elderly persons and that, if present trends continue, 40 per cent of our population will be over forty-five years of age by 1980.

III. MEDICAL ASPECTS

In a brief discussion, it is impractical to embrace the multiple facets of geriatric medicine. However, I will emphasize salient features of the medical patient beyond middle age.

While few if any diseases occur only in geriatric patients, there exists a group of disorders, the frequency of which increases sharply after the peak of maturity is reached. These diseases which are problems peculiar to geriatric medicine, are the four major groups of chronic and progressive disorders of senescence; circulatory and renal diseases; metabolic problems; arthritic disorders; and neoplastic diseases.

A. MANAGEMENT OF PAIN

Next to averting death and preventing disease the most important prerogative of the physician is annihilation of pain.

Until recently the prevailing practice in controlling non-surgical pain has been largely a matter of utilizing opiates. More recently the trend has been toward new methods and a more scientific and precise attack on the problem.

It is well recognized that the ideal attack on pain is at its source, and that the most satisfactory results are obtained by discovering and eliminating the pain stimulus. It does not follow that this approach is always possible, though it is regularly attempted in modern practice.

Recently much emphasis has been given to the elimination of pain by interrupting the pain pathways.

The cardiac cripple with angina pectoris that is not controlled with nitroglycerine may be made comparatively comfortable after the cardiac nerves are destroyed with alcohol.

Rheumatic pains of arthritis are more elusive when regional nerve therapy is attempted. Here, only local anesthetic solutions are useful, and the relief that may be experienced is usually only temporary. Frequently, however, such pain, once relieved, does not return after the effects of the local anesthetic drugs are dissipated. Hydrocortone injected into the joint space is proving very beneficial and will be watched with interest.

Sympathetic blocks, now used widely in the therapy of early peripheral vascular disease, are without serious danger, can be performed with little discomfort to the patient, and may be repeated often.

If the pain stimulus cannot be removed or its pathway blocked, the next logical attempt at relief is to elevate the pain threshold. Reliance must be placed on the opiates, alcohol, and, more recently, demerol.

It has been a fairly constant clinical observation that in advancing years small amounts of the opiates usually serve to relieve pain.

Demerol has a useful place as an analgesic for elderly patients. When large amounts (100mg.) are avoided, the drug produces a minimal effect on the rate or depth of breathing, and circulatory reactions are absent or of little consequence. It is recommended that 75 mg. be the maximum dose for patients 60 years of age.

B. THE DEGENERATIVE DISEASES

Heart disease is now recognized as the "Captain of the Men of Death."

Even though our knowledge is pitifully inadequate, however, we are at least able to tell the people something of the importance of protecting children from throat infections which may usher in an attack of rheumatic fever. We also know enough of the etiology of hypertensive cardiovascular disease to warn the mature business and professional man against overweight and against too long and too intense application to work, at the expense of rest and recreation. As Stieglitz points out; "The prevention of the degenerative disorders of later years is an individual matter, demanding initiative and effort on the part of the beneficiary. Perhaps the most important message which physicians can convey to maturing people is that health is not a right, but a privilege, and thereby entails the obligation of exertion to maintain it. Medical science cannot give health to anyone; it can merely guide so that one may learn how to use, but not abuse, his endowment."[2]

1. PERIPHERAL ARTERIAL DISEASE

Arterial insufficiency of the legs in aging and aged people is an important factor in their lives.

Some prevalent ideas in the treatment of arterial insufficiency must be revised.

What can and should be done for the elderly patient with peripheral anteriosclerosis depends upon the state and the severity of the disease. In all cases the first rule is complete cessation of smoking. The vasoconstricting action of tobacco smoking is so powerful that no therapeutic method will overcome its action. Whiskey is an excellent vasodilator and may be allowed in doses of one ounce or more three times a day, except in those patients who are known or suspected to be alcoholics.

When the symptoms are of fairly mild degree, postural exercise, as described by Buerger, is of considerable value.

The vasodilating drugs in the early stages, papaverine, nicotinic acids, and priscol, have proved beneficial.

C. ARTHRITIS

While a certain measure of hypertrophic arthritis is to be expected by everyone who lives long enough, it seldom cripples its victim as does the rheumatoid variety, which shows a marked preference for younger individuals.

While it must be admitted that there is an enormous amount to learn about arthritis, we are reasonably certain that chilling, fatigue, and faulty posture play as important a part in its causation as does the more widely publicized foci of infection. Another important factor in the etiology of hypertrophic arthritis is obesity.

D. DRUGS

Drugs available for use in specific management of the degenerative diseases are largely endocrine products. Specific drugs used to substitute for functions lost as a result of degenerative disease or the natural involution of an organ are:- insulin for diabetes mellitus; adrenal cortex extract for adrenal cortical deficiency or Addison's disease; also ACTH or cortisone; thyroid for disease fostered by hypometabolism; liver extract and folic acid for pernicious anemia; pancreatin for pancreatic fibrosis; estrogens for menopausal symptoms and cancer of the prostate; testosterone to improve retention of protein, treat male climacteric; and in palliative therapy of cancer of the breast.

Altered reaction in the aged to drugs is also very important. All the barbiturates are likely to excite and confuse the old patient. Bromides and potassium thiocyanate frequently accumulate because of the impaired renal elimination and lead to severe intoxication. Bromidism is often associated with excitation, and further ingestion of more bromide ions aggravates the condition. Paraldehyde is a safe sedative for aged people. Alcohol in moderation is useful in the management of the elderly. It supplies quick fuel, relaxes tensions, increases appetite, and is probably helpful as a coronary vasodilator.

Progress had been made in drug therapy of degenerative diseases but has been small in relation to the importance of the subject.

E. NUTRITION

Current clinical research on aging in nutritionally deficient persons emphatically suggests the importance of good nutrition in maintaining normal health in middle-aged and elderly patients. Patients appearing aged beyond their years because of nutritive failure not infrequently appear much younger following adequate treatment.

The chief diet defects in the mature and aging are calcium, iron, and protein. Seventy-five per cent of the men of 60 and over suffer a lack of one or more. On the other hand, many suffer dietary excesses; notably sugars and starches and possibly cholesterol, a substance found in egg yolk and butter.

At present the diet considered best for the ag- and low in fat. The vitamin content should be higher than average.

IV. SURGICAL ASPECTS

Surgeons are reconsidering their attitude toward geriatric patients in view of the fact that modern technics in preoperative and postoperative care and in anesthesia have lessened the risk of operation in middle-aged and elderly persons.

In preparing the geriatric patient for operation, many factors including nutrition, sedation, and psychological attitude should be considered. The patient should be in nitrogen balance as estimated by no weight loss or a period of gain in weight; or more accurately measured by a normal blood volume and total blood protein value of at least 6 gm. per 100cc. Very obese patients should be reduced cautiously preliminary to such operations as cholecystectomy or repair work.

Vitamin supplementation should be carried out routinely. Protein may be spared by adequate glucose administration, and protein reserves augmented by plasma or a protein hydrolysate.

The immediate postoperative period is one requiring constant observation for complications which are not well tolerated by geriatric patients. These patients should receive the benefit of early ambulation and should be permitted or forced to get out of bed as soon as conditions will permit. Chief contraindications to early ambulation are profound shock, uncontrolled hemorrhage, and imminent death.

CONCLUSIONS

Study of the problems of aging and a practical program for enabling men and women to use and enjoy the added years of life is a challenge, not to the medical profession alone, but to everyone. The physician's approach to old age and senescence in his patients must change from passive defense to active offense and confidence. Age must be rated by health and ability rather than by birthdays; people who survive or exceed present-day life expectance of 68 years must be treated as statistical errors.

The object of geriatric medicine is to add breadth and depth, rather than mere length to life.

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Recognition and Management of Deafness in Children

RALPH SNEED, M. D.
Jackson, Mississippi

LET ME SAY at the outset that I have nothing new or amazing to offer on the subject under consideration but rather will endeavor to review briefly some of the major points of such a vast subject.

In this discussion we shall consider deafness as any impairment of hearing to the point that the residual hearing is of no practical value in communicating with others. Therefore, it will include the hard of hearing, or partially deaf, as well as the totally deaf.

The number of deaf and partially deaf in the United States has been variously estimated. The U. S. Public Health Service estimate that about 15,000,000 of all ages in this country are thought to have some degree of hearing loss, and that of this number about 3,000,000 are school children of all ages. In my own state of Mississippi a hearing testing program carried out by the school health service showed that seven to eight per cent of the children tested needed to be referred to private physicians for further testing and/or treatment. Of 33,433 children tested in this program, 2,882 were thus referred. It therefore becomes obvious that the problem is no small one.

The etiological factors involved in hearing loss in children are quite varied. In a group studied in the Chicago area, including 3,120 children, the deafness was congenital in 61.8 per cent and acquired in 38.2 per cent. Of those in whom deafness was acquired, 59.2 per cent occurred in children under three years of age. An additional 28.2 per cent were from 3 to 10 years of age. Causes of congenital hearing loss are usually spoken of as hereditary or toxic—meaning some toxic condition within the mother which reacts upon the embryo or fetus by inhibiting the development of the end organ of hearing, such as measles, virus diseases, etc. Causes of acquired type of hearing loss are much more diversified; some of the more common ones might be listed as follows: 1) meningitis, 2) encephalitis, 3) brain tumor, 4) concussion, either central or auditory, 5) fracture of temporal bone, 6) scarlet fever, 7) measles, 8) mumps, 9) whooping cough, 10) influenza, 11) pneumonia, 12) typhoid fever, 13) diphtheria, 14) syphilis, 15) common cold, 16) any disease causing a high fever, 17) external otitis, 18) impacted cerumen, 19) foreign body impaction, 20) otitis media—acute or chronic, suppurative or serous, 21) mastoiditis, acute or chronic, 22) excessive growth of lymphoid tissue in nasopharynx, 23) toxic agents such as quinine, aspirin and streptomycin, and one final large group which we shall only mention—the various psychogenic types.

DIAGNOSIS

Of the many problems that face an otologist today, probably the most difficult is the diagnosis of deafness in very young children. In this problem the mere establishing a diagnosis is not sufficient. The presence and degree of residual hearing must also be established. With the more recent advances in teaching methods and the availability of modern and powerful hearing aids, it has become obvious that the earlier a diagnosis of hearing loss or deafness can be made and proper training and treatment instituted the more likely that individual is to be able to lead a normal life. Many pre-school hearing clinics today are anxious to begin the training of a deaf child as soon after its eighteenth month of life as possible. the availability of such training programs, more And as a result of the widespread publicity of and more children are appearing in the otologist's offices at younger and younger ages. Therefore, our problem would seem to become more and more difficult. Devices for the purpose of measuring residual hearing in this group are continually being developed, but so far all of them require long and tedious training of the child before accurate results can be obtained. Most of you are familiar with these devices—such as the type in which after a certain sound is produced, a corresponding button can be pushed and a doll or a clown or an animal will pop out of a box. One of the most recent developments in this field is the "psychometer" made by the Maico Company which uses a "pure tone" sound followed immediately by a mild shock impulse. This shock impulse produces a change in skin resistance which can be measured electrically. After the child has had a training period the changes in skin resistance are measured and charted, revealing the db. level at which the child begins to hear.

"Free field" testing is still probably the most accurate or at least the most widely accepted method in general use today—particularly at hearing centers. The main objection to this type of testing, as far as the otologists are concerned, is the elaborateness of equipment and the time consuming element. It is certainly a great advantage to have such facilities close at hand for referral purposes, for it is nearly always necessary to call upon the speech and hearing centers in the community—even in spite of repeated office examinations—to determine the presence or absence and the amount of residual hearing.

It can readily be seen that all of these devices require much time and training and are not practical for use in the office of the average otologist, but they are extremely valuable in the hands of the trained personnel in pre-school hearing and speech centers.

Thus the problem of diagnosis in the very young returns to tax the ingenuity of the otologist. Usually the mother is the first to suspect that something is wrong. The child is 1½ or 2 years old and has as yet made no effort to talk. If it is a first child, the grandparents may be the first to recognize that speech development is delayed. At any rate, the usual chief complaint is that the child does not talk. The parent may or may not be suspicious of the presence of deafness. It is at this point that we begin a careful history. Questions such as the following must always be asked:

1. How old is the child?
2. Is there any history of deafness in parents or grandparents?
3. Was delivery normal or instrumental?
4. Was child full term or premature?
5. Was child yellow or jaundiced for a period after birth?
6. Were Rh factors compatible?
7. Did mother have any illness during pregnancy—particularly German measles?
8. Have parents any reason to believe that child could ever hear? (It should be kept in mind here that many parents will insist that their child can hear because he or she always turns the radio on extremely loud—or because he will look up when a plane passes near. Those signs do not necessarily mean that the child is hearing; instead, he may be reacting to vibratory stimulation.)
9. Does the child make any vocal sounds—if so, can they by any stretch of the imagination be considered to be words?
10. Has the child had any serious illnesses; particularly any with prolonged high fever?
11. Have there been periods of prolonged medication?
12. Has he had ear infections or chronic draining ears?
13. Has he had attacks of tonsillitis or throat infections?
14. Is he a mouth breather?
15. Has he ever had sinus infections or shown evidence of allergy?

After these and other pertinent questions have been answered, the otologist is ready for his examination. It is always helpful if the examiner, while going through the history, has been using a few maneuvers designed to gain the confidence of the child and to show that he will not hurt him.

During the examination, the child's gait, alertness and behavior should be noted—abnormality of gait, for example, might indicate a brain injury. Other congenital abnormalities, such as crossed eyes, cleft palate or hare-lip, should be noted. The condition of the nasal membranes and the presence or absence of nasal obstruction must be noted. The mouth, teeth, hard palate, the tongue and tonsils must be observed. It is important to examine the nasopharynx and eustachian tube orifices. The external ears, the canals and the drums must be closely inspected. Frequently x-rays of the sinuses, mastoid areas, and skull, as well as special views to show the presence or absence of the semi-circular canals or ossicles, may be helpful. Time does not permit the discussion of all the various abnormalities which might be encountered on physical examination, correction of which would improve the hearing, but most of us are familiar with these conditions and their management.

After the routine examination has been completed, it is nearly always necessary to use other methods to try to determine the presence or absence of deafness. It is often impossible to get enough cooperation from the patient at one office visit even to hazard a guess as to whether or not hearing loss exists. Caloric tests, if the child is old enough to tolerate them, will give us information concerning the presence or absence of semicircular canals. Tuning tests can be used for the same purpose, and if the very young child is to have a general anesthetic for any purpose, the caloric test can be carried out while the patient is under the influence of ether. These children must be seen on numerous occasions. It is helpful at times to have some tests made at home. These tests are of necessity crude, since they must be carried out by the parents. I usually advise the parents to test the hearing when the child is asleep. This is by no means an accurate test but will frequently give much needed additional information. In carrying out this test the parents must be cautioned to be sure that the child is asleep and to make noises that will serve only as sound stimulants and to avoid any noises that might also be vibratory stimulants. Another such test is to place the child in such a position that vibrations will not be a factor and that his back will be to the source of the sound; then have one parent attract his attention while the other increases the volume on the radio, until the child's attention either is or is not attracted by the radio. I am sure that all of you have other and better tests of the same type which you use frequently in your own practice. I have in my office a sound amplifier connected to a headphone which I use for two purposes. In the first place I find it very helpful in talking to elderly hard-of-hearing patients in the office and I also lend it to parents who have a child that may or may not be deaf. I like for them to keep it a month or longer and study the reaction of the child with and without the aid on.

TREATMENT

In discussing treatment it is necessary to deal with each major type separately. We all know that in a conductive loss every effort must be made to restore the hearing to normal, or at least to a serviceable level. This will include such things as meticulous removal of the adenoids; discriminate use of x-ray or radium; clearing up sinus infections; control of nasal allergies; elimination of middle ear infections; and correction of congenital deformities that might be contributing to the condition. Along this line I would like to say here that in those cases where there is a congenital absence of the ears I favor full investigation to determine whether or not the individual is a candidate for a Patee operation, rather than routinely relegating all of them to the plastic surgeon. It is relatively simple to take x-rays by the technique of Doctor George Owen of Los Angeles to determine the presence or absence of ossicles. The presence of ossicles is an indication that the Patee operation will be successful. The surgical procedure is only slightly more difficult than a mastoid operation and although it does not restore hearing to normal it does bring the hearing level to such a point that a hearing aid will enable the patient to communicate satisfactorily with his fellowman. The application of a plastic ear completes the procedure and you have not only given the patient a pleasing appearance but have also given him functional hearing.

I shall make no effort to go further into detail concerning the treatment of this group but I would like to make a few brief remarks about the management of the child with perceptive deafness. It has not been many years since all of these children were considered hopeless; if they were fortunate they would be sent to a school for the deaf where they were taught little more than to read and write and to communicate with each other by a sign language. Through the foresight and persistent efforts of many individuals this condition has now completely changed. It is now universally recognized that early training of these children is essential. Through modern teaching methods and equipment the vast majority of these handicapped children can be taught to speech read and use hearing aids to such a degree that their hearing loss serves as practically no handicap. There are pre-school speech and hearing centers scattered throughout the country. I recently had the privilege of being slightly instrumental in establishing such a center in my home town and although there are only six deaf and two hard-of-hearing pre-schoolers enrolled at the present time, we feel that the mere establishment of such a school is a tremendous step forward. Other such schools are being established and the older schools are continuing to expand but, evenso, reports indicate that many of these schools are overcrowded and have to place children on the waiting list. Let us hope that, with continued expansion, this situation can soon be overcome and that facilities will be available for all who need them.

I am convinced that it is advantageous to try to get a hearing aid on these children by the time they are eighteen months old if it is at all possible. There are many men who believe that a hearing aid should be put on at six months of age if the diagnosis can be established. I have seen one child who had an aid put on at the age of nine months and it worked very satisfactorily. In fact, the child would awaken each morning and begin to cry and would continue to cry until his hearing aid had been adjusted. Usually at the first visit I advise the parents to take the correspondence course from the John Tracy Memorial Clinic in Los Angeles. This will give them a better understanding of the problem they are faced with and will better equip them to care for the child both before and after he has been enrolled in the pre-school hearing center, which will usually be at about the age of two or two and one-half years. I think it is of the utmost importance that the parents be reassured concerning the physical and mental development of their child. This will not only reduce the tremendous psychological shock but will put them in a better frame of mind for the proper training and care of their child. The parents should understand that the personality defects which a deaf child may exhibit are not implicit in his handicap but develop because of limitations of social contacts and improper attitudes of parents.

The ramifications of the psychological aspects of this problem are so wide and varied that to attempt to cover them at this time would be utterly impossible. Suffice it to say that it behooves every otologist to acquaint himself sufficiently well with the over-all picture that he can intelligently guide the parents into the proper channels for the best care of their child.

Myxedema

L. T. Carl, M .D., *Associate Editor*
Jackson, Mississippi

EDITORIAL SYMPOSIUM

The incidence of myxedema is said to be low, but its apparent rarity may be due to our failure to recognize it or because we do not think of it, or consider it to be rare. No obvious cause for the usual case of myxedema can be found, and one must assume it to be due to primary atrophy of the gland.

In advanced hypothyroidism or myxedema all body processes are slowed down due to deficiency of the thyroid hormone. This explains the production of the various symptoms and signs of the disease. Permeability of capillaries is increased, causing an accumulation of interstitial fluid which produces a nonpitting type of edema, as well as accumulation of fluid in the body cavities. Myxedematous changes take place also in the heart muscle. This causes changes in the EKG which are so characteristic that the diagnosis can be made, and often confirmed in a suspected case, from this finding alone. The EKG becomes normal after thyroid medication. In advanced cases the heart enlarges. After thyroid medication the heart decreases in size, due to resorption of myxedematous swelling of the heart muscle. Some of the apparent increase in heart size may be due to increase in pericardial fluid. Anemia is common in myxedema. It improves on thyroid medication, although less rapidly than the other manifestations. In an anemia refractory to treatment, hypothyroidism or myxedema must be considered as a possible cause. Myxedema in women very commonly causes menstrual disturbances, and this is most often a menorrhagia or functional uterine bleeding.

Myxedema is insidious in its onset and slow in its progress. It may even escape attention of the physician who is seeing the patient through the years. However, when myxedema is fully developed, there is a striking appearance, which should be unmistakable and diagnostic. Hypothyroidism is often improperly labeled neurasthenia, nervous exhaustion or nervous indigestion. These diagnoses reflect the patient's fatigue, probably the most common symptom, which is usually of gradual onset and slowly progressive, so that finally everything is an effort, and the patient is content to rest or fall asleep rather than struggle against his fatigue to accomplish even his or her routine daily tasks. The British have emphasized the fact that patients with myxedema show definite psychotic changes at times.

The patient's appearance often is diagnostic. Otherwise, a careful history will usually help, and determination of the BMR. However, the BMR, like any test, can be inaccurate and may be grossly misleading. If done correctly with the patient in a basal condition, it is most helpful in diagnosis. However, too much reliance must not be placed on a BMR which does not coincide with the clinical impression. When the basal metabolic rate falls to minus 20 percent, clinical symptoms and signs usually appear. With severe myxedema, readings as low as minus 50 per cent are found. Determination of the cholesterol content of the blood is helpful. It usually, but not invariably, is elevated in proportion to the severity of the myxedema and or the lowness of the BMR. Arbitrarily, a reading of 3 micrograms or less of protein-bound iodine is strongly suggestive of hypothyroidism. Like the basal metabolic rate and blood cholesterol, the protein-bound iodine is a confirmatory, and not an indispensable, test in frank myxedema, although it may be of great value in a borderline case. Previous diagnostic tests using iodine-containing opaque media (priodax, telepaque, diodrast, pantopaque, etc.) would rule out the usefulness of the test for months, and iodine medication such as Lugol's solution, potassium or other iodides, or even thyroid extract medication (26% to 36% iodine) would give deceptively high readings. Measurement of the uptake of radioactive iodine by the thyroid is not yet available except in research centers. Myxedematous gland shows an abnormally low uptake.

The main point to be stressed in treatment is that small doses of thyroid extract should be used, i.e., the smallest dose which will control symptoms. Management of a case should be based on one's clinical impression of the patient's progress more than on the BMR reading.

When thyroid extract is started, one can see rapid improvement, consisting of an increase in sense of well-being, alertness, a change in the voice, and decrease in swelling of the face, feet and legs. More slow in a change to normal of the skin texture, regrowth of hair, resumption of menses if in the menstrual age, and gradual improvement in anemia and return of the EKG to normal. It is most striking and most gratifying to observe what such a small and simple medication as ¼ to ½ grain of thyroid extract produces in these patients. If one is on the alert for these cases, he will find that they are not rare, although often overlooked. Since the response to treatment is so gratifying and satisfactory, it behooves us to recognize it more often.

Most people would succeed in small things if they were not troubled by great ambitions.

—Longfellow

ABSTRACT FROM PEDIATRIC LITERATURE

HARVEY F. GARRISON, M. D.

ALLERGY IN IDENTICAL TWINS. Ralph Bowen, Houston, Texas. J. Allergy 23:236-44, May 1953.

The author has studied 59 pairs of (monozygotic) identical twins, whose obstetric records indicated they were monoplacental. In many cases fingerprints were taken and the impressions proved to be similar. In three pairs, brain wave studies were made and found to be almost duplicated in pattern. The youngest pair was 8 weeks old and the oldest pair 56 years old. The majority were between 6 and 15 years of age.

Contrary to other observations, however, coexisting allergies in twins were the exception and not the rule. Only seven sets presented dual allergies. In the 52 other cases an allergic condition existed in only one twin to the degree that medical aid was sought. Many of the children first experienced their symptoms as early as 2 months of age. In over 85 per cent of these twins, a familial incidence of allergy was present.

This survey of twins challenges the concept that by making maternal dietary restrictions during pregnancy, allergy is less likely to appear in the newborn. Similarly, parental rejection seems an unlikely factor. How can parents reject one and accept one of a pair of young identical twins?

The author noted that "except for the adult twins, and even a few of these were included, all twins were dressed indentically; same color of clothes, same tie and hair ribbon, as well as jewelry. All of this dual costuming proved to be bad, for it failed to permit individualistic expression. Being in the same grade at school and with one another constantly provoked a certain competitiveness, hostility, and oddly, a certain dependence. Usually one of the twins was more dominant and the leader.

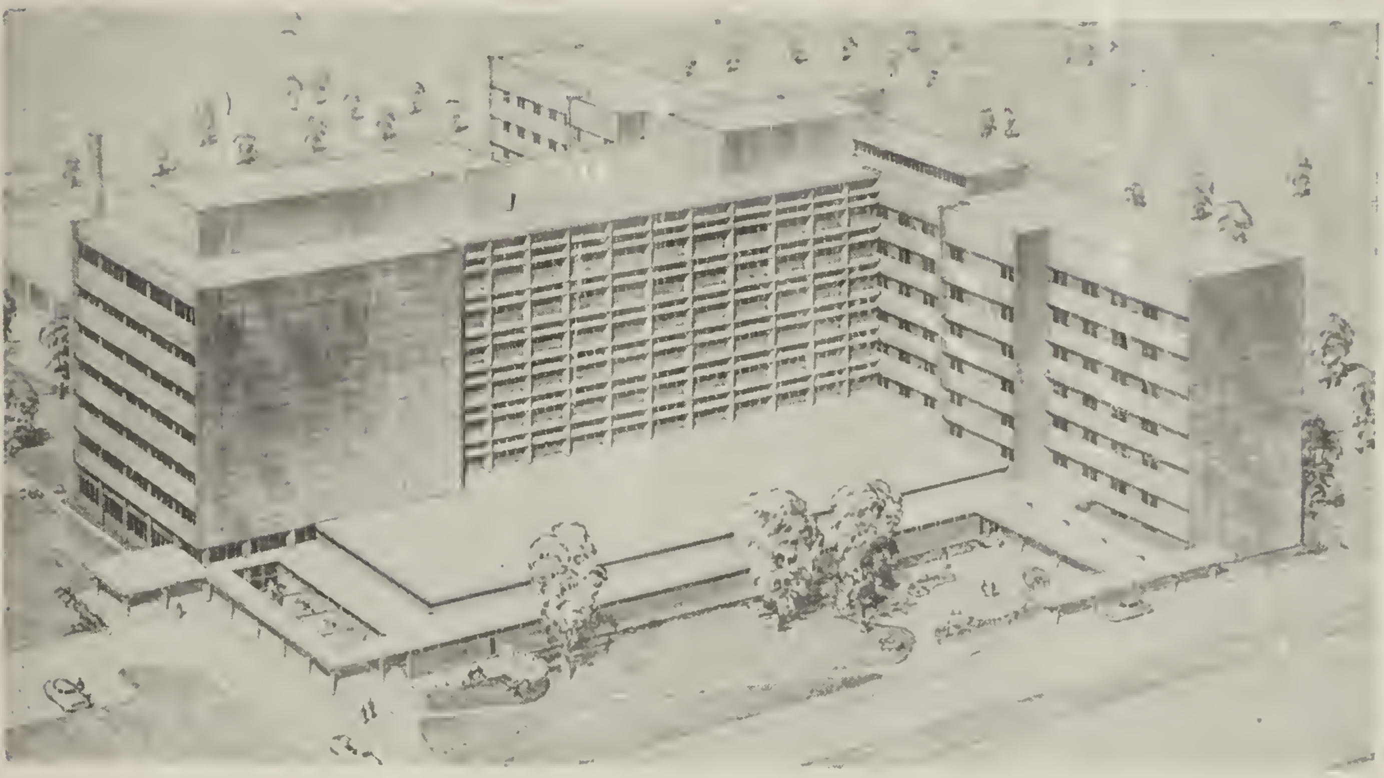
"After watching these children over a period of years, I urge that twins be treated as distinct individuals. Encourage them to dress independently and differently. In some instances the attendance at different schools would be advantageous. Several of the twins, after reaching adult life, felt very dependent—in fact, two had this feeling of dependence to such a degree that they were unable to live separately, and gave this as an excuse for divorce."

COMMENT:

This is a very interesting article and should cause a great deal of serious thought relative to

(Continued on page 449)

Rapidly Becoming Medical Center



New Medical School and Hospital Under Construction

JACKSON SEES EXPANSION OF HOSPITAL FACILITIES

With the opening of the new St. Dominic-Jackson Memorial Hospital, occupancy of a new annex to the Mississippi Baptist Hospital, and the completion of the University Hospital, it is hoped that the acute shortage of hospital beds in Jackson will be relieved.

Some facts about these three hospitals are given below.

Having purchased the Jackson Infirmary from a group of physician-owners, the Dominican Sisters came to Jackson on April 15, 1946, to assume the administration of the hospital which they renamed, St. Dominic Hospital.

This hospital, numbering 80 adult beds and 19 bassinets, was fully approved by the American College of Surgeons in 1949. In 1942, the School of Nursing which was organized in 1949, was one of the six schools of Mississippi to receive temporary accreditation from the National Accrediting Board. St. Dominic Hospital enjoys institutional membership in the American Hospital Association, in the Catholic Hospital Association, in the Mississippi Hospital Association, and in the American Medical Association.

Realizing the inadequacy of the present outmoded hospital structure, the Sisters planned a new hospital and began construction of same in 1942 on a twenty-acre site on Lakeland Drive purchased from the State of Mississippi in 1949 for the sum of $30,000. To honor the citizens of Jackson, the new hospital was incorporated under the name of St. Dominic-Jackson Memorial Hospital.

The Sisters borrowed money for construction and launched several drives for public subscriptions to aid in construction costs.

At this date, the construction of the fire-proof, modern hospital is complete with four floors for a patient occupancy of 130 beds and with two floors "roughed-in" for future expansion in bed capacity. The new structure features such efficiency devices as dumb-waiters, pneumatic tubes, tray-veyors, and elevators. It provides for the comfort of patients, doctors, and personnel by the use of air-conditioning, lighting systems, communication systems, and extensive window areas. Pending the liquidation of a $300,000 deficit, the hospital will open on May first.

The history of the Mississippi Baptist Hospital dates from a seven room antebellum frame residence established as the Baptist Hospital in 1911 to its present status as the largest non-governmental hospital in our state. Its present facilities include the main hospital building, three dormitories for white student nurses, one dormitory for colored student nurses and an educational building for the School of Nursing. Its present bed capacity is 262 beds and 40 bassinets. The hospital admits in the neighborhood of 15,000 patients including newborns each year.

At present a construction program is in progress at the hospital which will, when completed, add approximately 100 beds, making the total capacity of the hospital 350 beds and 50 bassinets. Two floors of the new addition are expected to be open within the next 45 days. The completion date on the other three floors including the new maternity department, the new children's department and the expansion of surgery and the pathological laboratory is indefinite at this time.

It has the only School of Nursing in Mississippi that trains colored young women to become graduate nurses. Its present enrollment, both white and colored, is 184. Within the next two or three years the school's enrollment is expected to be maintained at a level of from 250 to 275. Future plans of the hospital's development call for the School of Nursing to be gradually over a long period of time moved to the spacious property across north State Street from the hospital.

In the years ahead it is contemplated that the next major step in the hospital's development will be the replacement of the north end of the hospital, which is the original red brick building, with a modern, up-to-date addition similar to the south end of the hospital.

The hospital is nationally approved by the Joint Commission on Hospital Accreditation. It is on the registry of the American Medical Association and is a member of the American Hospital Association, the American Protestant Hospital Association, and the Mississippi Hospital Association. It is approved for the training of interns of which it has seven at the present time. The School of Nursing is accredited by the State Board of Nurse Examiners and has national temporary accreditation for a five year period.

The University Hospital was authorized under Chapter 378, Mississippi Laws of 1950 which reads in part as follows, "There shall be built, equipped and operated as a part of said medical school, a teaching hospital of the size of not less than three hundred fifty bed capacity, together with all ancillary buildings and physical facilities needful or proper for the establishment, operation and maintenance of such a hospital as part of a fully accredited four-year medical school, including clinical and out-patient services and all types of services deemed to be necessary or desirable as a part of the functioning of such a teaching hospital. Said teaching hospital shall be known as the "University Hospital."

The teaching hospital costing $4,500,000 is financed with $1,500,000 in Hinds County Funds and $3,000,000 in Federal Funds made available by the Mississippi Commission on Hospital Care from monies appropriated by Congress under the Hospital Survey and Construction Act.

The State Building Commission is responsible for the construction of the building which upon completion will be deeded to the University of Mississippi for operation. The medical school and the teaching hospital are being built as one building so as to promote the closest possible association of research and educational facilities and personnel in the basic sciences as well as in the clinical field. Construction was started in the late fall of 1952. The University Hospital is scheduled to begin operation in the spring of 1955.

The 350 beds in the teaching hospital will be available to patients needing any type of medical or surgical care with the exception of psychiatric problems. Due to the limited number of hospital beds, the need of a wide variety of cases for teaching and the ready availability of the State Mental Hospital at Whitfield, it was deemed advisable to limit psychiatric care to emergency in-patient care only. A close association with the State Mental Hospital should guarantee needed in-patient care for psychiatric patients who will be available for medical education under most favorable circumstances. The same applies to the State Tuberculosis Sanatorium and the care and teaching of tuberculosis.

The University Hospital will have a large emergency unit and a very extensive out-patient department. It is anticipated that approximately 15,000 emergency visits and 50,000 clinic visits will be recorded annually. These patients should be of great value to the medical school in fulfilling their responsibility of educating physicians. Special emphasis will be given to out-patient psychiatric patients.

The primary purpose of the University Hospital is its function in medical education. Over and above this function it will serve as a place of training for all types of medical personnel needed by doctors, hospitals, health departments and communities to assure adequate medical care to the citizens of Mississippi. Not only will training be available for personnel at the professional level such as technicians and dieticians but also training in related fields particularly in hospital maintenance and housekeeping. The hospital should function easily as a center for all medical and hospital personnel.

STATE PROGRAM

EIGHTY-SIXTH ANNUAL SESSION OF THE MISSISSIPPI STATE MEDICAL ASSOCIATION

Heidelberg Hotel, Jackson, Miss.

Dr. Ewing

Dr. McCall

President
M. J. Ewing, M. D., Amory

President-Elect:
Cummings H. McCall. Gulfport

Secretary
George E. Twente, M. D., Jackson

General Chairman
Temple Ainsworth, Jackson

Stirling S. McNair, Jackson
President
Central Medical Society.

Dr. Ainsworth

Dr. McNair

SCIENTIFIC SESSIONS

SECTION ON PEDIATRICS

Victory Room

May 11, 1954, 1:00 p.m.

Charles R. Gillespie, M.D.
Laurel, Chairman

THE PROGRAM

I

“Common Orthopedic Abnormalities in Infancy
Thomas H. Blake, M.D., Jackson
Discussion: L. L. McDougal, M.D., Tupelo

II

“Immunizations”
Margaret H. D. Smith, M.D., New Orleans, Louisiana
There will be no formal discussion of Dr. Smith's paper, but a brief question period will follow.

III

“Heart Murmurs in Children”

John A. Bigler, M.D., Chicago, Illinois

There will be no formal discussion of Dr. Bigler's paper, but a brief period will follow.

IV

“Brain Abscess Associated with Congenital Cardiac Defects”
Charles Neill, M.D., Jackson
Discussion: J. L. Dunagin, M.D., Hattiesburg

SECTION OF SURGERY

Victory Room
May 2, 9:00 a.m.

Stanley A. Hill, M.D., Chairman

THE PROGRAM

I

“Gall Bladder Surgery”
J. K. Avent, Sr., M.D., Grenada
Discussion: G. S. Hicks, M.D., Natchez

II

“Medullary Pinning of Fractures” (Motion Picture in Color)

Leslie V. Rush, M.D., Meridian
Discussion: W. Griffin Bland, M.D., Gulfport

III

“The Management of Crushing Injuries of the Chest”

Duane Carr, M.D., Memphis, Tennessee

IV

“Review of Breast Lesions”
R. H. Fenstermacher, M.D., Vicksburg
Discussion: Howard A. Nelson, M.D., Greenwood

V

"Carcinoma of the Stomach"
Alton Ochsner, M.D., New Orleans, Louisiana

SECTION ON EYE, EAR, NOSE, AND THROAT

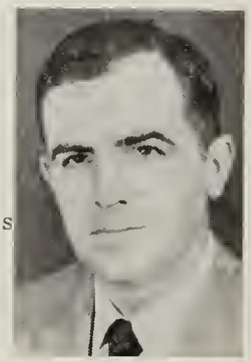
Rose Room
May 12, 1954, 1:00 p.m.
Lyne S. Gamble, M.D., Greenville, Chairman

THE PROGRAM

I

"Principles of Treatment in Infectious Diseases of the Eye"
James H. Allen, M.D., New Orleans

II



"Management of Common Forms of Deafness"
Miles L. Lewis, M.D., New Orleans

III

"Practical Points in Clinical Gonioscopy"
Samuel B. Johnson, M.D., Jackson
Discussion: Thomas W. Wesson, M.D., Tupelo

IV

Report of the Committee on Standardization of Procedures in Workmen's Compensation Cases
Lynn D. Abernethy, M.D., Jackson

V

"Simplified Dacryocystorhinostomy" (Motion picture)
Charles E. Iliff, M.D., Baltimore, Md.

SECTION ON OBSTETRICS AND GYNECOLOGY

Victory Room
May 12, 1954, 1:00 p.m.

Richard A. Street, Jr., M.D., Vicksburg, Chairman

THE PROGRAM

I

"The Diagnosis and Surgical Treatment of Acute Gynecological Conditions"

Joseph H. Pratt, M.D., Rochester, Minnesota

II

"The Use of Cortisone in Gynecology"
Blanche Lockard, M.D., Jackson
Discussion: W. B. Wiener, M.D., Jackson
W. L. Stallworth, M.D., Columbus

III

"Indications and Advantages of Vaginal Hysterectomy"
K. Ramsay O'Neal, M.D., Hattiesburg
Discussion: Walter Simmons, M.D., Jackson, I. C. Knox, Jr., M.D., Vicksburg

IV

"Indications for Cesarean Section"
J. P. Fatheree, M.D., Laurel
Discussion: Laura Williams, M.D.,, Carl Lewis, M.D.

V

"Severe Complications in Late Pregnancy as a Result of Chickenpox"
Carter O'Ferrall, M.D., Jackson
Discussion: I. J. Newton, M.D., Greenville, Gus Rush, Jr., M.D., Meridian

SECTION ON MEDICINE

Victory Room
May 13, 1954, 9:00 a.m.
H. H. McClanahan, Jr., M.D., Columbus, Chairman

THE PROGRAM

I

"Amoebiasis"
Ben F. Hand, M.D., Greenville
Discussion: Lewis Farr, M.D., Greenville, John H. Graves, M.D., Leland

II

"The Use and Abuse of the Electrocardiogram in Clinical Medicine"
Eugene M. Murphey, III, M.D., Tupelo
Discussion: J. P. Melvin, Jr., M.D., Jackson, A. C. Guyton, M.D., Oxford

III

"Chronic Non-Specific Ulcerative Colitis"
James F. Crenshaw, M.D., Birmingham, Alabama

IV

"Virus Hepatitis"

Lucian M. Ferris, M.D., Vicksburg

Discussion: A. Gayden Ward, M.D., Jackson, Wm. E. Weems, M.D., Laurel

V

"The Present Status of the Medical Treatment of Hypertension"

Lyle Motley, M.D., Memphis, Tennessee

SECTION ON HYGIENE AND PUBLIC HEALTH

Victory Room

May 13, 1954, 9:00 a.m.

A. L. Gray, M.D., Jackson, Chairman

THE PROGRAM

Program Topic: The Problem, Current Control Efforts, and Future Needs in Mississippi in:

I

Tuberculosis Control

Lee R. Reid, M.D., Jackson

II

Cancer Control

A. E. Brown, M.D., Columbus

III

Heart Disease Control

Toxey E. Hall, M.D., Belzoni

IV

Venereal Disease Control

W. E. Bunch, Jr., M.D., Hattiesburg

V

Question and Discussion Period

Moderator: A. L. Gray, M.D.

Panel: Lee R. Reid, M.D., A. E. Brown, M.D., Toxey E. Hall, M.D., W. E. Bunch, Jr., M.D.

PUBLIC NIGHT PROGRAM

May 11, 8 p.m.

Invocation	
Memorial Service and Necrology	George E. Twente, M.D., Secretary
Distinguished Service Oration	To be announced
President's Address	M. Q. Ewing, M.D., President
Address	Edward J. McCormick, M.D., President, American Medical Association, Toledo, Ohio

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If a man thinks about his physical or normal state he nearly always discovers that he is ill. —Goethe

Diseases of the soul are more dangerous and more numerous than those of the body.—Cicero

AUXILIARY

PROGRAM

Woman's Auxiliary to the Mississippi State Medical Association

Hotel Heidelberg, May 11-12, 1954

Mrs. S. Lamar Bailey, Kosciusko, President.

Mrs. M. M. Snelling, Gulfport, President-Elect.

Mrs. T. A. Baines, Jackson, General Chairman.

Mrs. E. L. Posey, Jr., Jackson, President, Woman's Auxiliary, Central Medical Society.

Monday, May 10

4:30 p.m. Pre-Convention Board Meeting, Silver Room

Tuesday, May 11

8:30 a.m. Registration, Heidelberg Lobby Arcade

9:30 a.m. Open Session, Rose Room, Mrs. S. Lamar Bailey, Kosciusko, presiding

Invocation—Mrs. Carter O'Ferrall, Jackson

Membership Pledge—Mrs. Harvey Garrison, Sr., Jackson

Address of Welcome—Mrs. E. L. Posey, Jr., Jackson

Response—Mrs. A. E. Brown, Columbus

Presentation of Convention Chairman, Mrs. E. L. Posey, Jr., Jackson

Presentation of President-Elect—Mrs. M. M. Snelling, Gulfport

Report from A.M.A. Auxiliary Meeting—Mrs. Augustus Street, Vicksburg

Report from S.M.A. Auxiliary Meeting—Mrs. George W. Owen, Jackson

(continued on page 449)

THE MISSISSIPPI DOCTOR

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $3.00.

Published monthly at 104 Hospitality Street, Booneville, Mississippi. Return postage guaranteed.

W. H. ANDERSON, M.D. .... Editor-in-Chief
MILDRED P. ANDERSON .... Assistant Editor
David E. Guyton, Blue Mountain College .... Poet

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Address all material for publication to W. H. Anderson, M.D., 104 Hospitality Street, Booneville, Mississippi.

§

EDITORIALS

JACKSON ISSUE

You will note that this issue of the journal is in the main a Central Medical Society issue. Associate Editor L. T. Carl secured the papers and the summary on the hospitals of Jackson. We are very grateful to him for this.

Jackson is growing rapidly as a medical center. We feel sure that by our next state medical meeting our four-year medical school will be well under way. This school will no doubt be a big asset to Jackson as a medical center. Some favored having this medical school and some did not. This applies to both doctors and citizens. Each person had a right to his position. But now when the medical school becomes a reality, it will be the part of wisdom for every doctor and every citizen to be behind it. The medical school can not be a great success without the support of all. It is possible for every citizen to be benefited by the services of this school. It can well be the very greatest in the nation for training general practitioners and public health officers. In Jackson we can have one of the greatest medical centers in the nation if we give our support to it in every way. The State Medical Association can be a great help to the medical school. It has a duty to perform in undergirding it in an unstinted and an unselfish way. Convening the State Medical in Jackson each year for awhile might be well worth consideration. This fine and rapidly growing city is centrally located and gives advantage in this way.

We hope and believe that the coming meeting in Jackson will be our largest and perhaps our best. Let us go and make it so.

THE UNIVERSITY HOSPITAL

In the past eight years Mississippi has witnessed the evolving of a real hospital system in the state. Public and private capital both have been responsible for this development. The University Hospital as a unit of the University Medical Center is a state institution. As such it will serve the entire state. In meeting its state responsibilities it should serve humbly but effectually, emphasizing cooperation with all, as the center of our Mississippi Hospital System.

FIFTY-YEAR CLUB

The Fifty-Year Club will have its luncheon at the Robert E. Lee Hotel at twelve o'clock, Tuesday, May 11. Dr. J. K. Avent will again be host to the club, a kind and generous compliment which is deeply appreciated. The faces of many of our most beloved will be missing. These noble men have passed to their reward. They leave memories that are sacred. New faces will be present. We hope to have our largest attendance this year, when several new certificates and pins will be presented at the meeting.

RED LETTER DAY FOR ARKANSAS

On May 20, 1954, from 2 p. m. to 10 p. m., in the little city of Tyronza forty miles west of Memphis an important and unique meeting will be held. Dr. L. H. McDaniel is the genius behind this meeting. Eminent men from all over the United States are on the program. In the matter of public relations and human understanding of our problems it marks a new day. No doctor in this section would fail to find value in this meeting. Here he may secure information, inspiration, and vision for the future. In advance we congratulate Dr. L. H. McDaniel who is one of the nation's outstanding general practitioners and citizens.

YOURS TO SERVE

For more than 25 years the MISSISSIPPI DOCTOR has done its best to serve our state and the Mid-South. We are very grateful to many who have expressed their appreciation for its services and for the contribution they have made to its improvement. We can continue to make it serve better with your sincere help and cooperation.

VISIT THE EXHIBITORS

It would be well for our doctors to visit every exhibitor at the state meeting. We could not travel in medicine without the research laboratories. They too have a high purpose to serve the people. Medical service is so big now that it takes the united effort of doctor, nurse, dentist, pharmacist, hospital, and research laboratory to do the job. Our exhibitors are the main source of finances for the convention. Let us show them our fraternal interest and endorsement.

The University of Tennessee College of Medicine in Memphis will offer a postgraduate program in obstetrics and gynecology for mid-South physicians May 19, 20, and 21.

The program will be offered in cooperation with the maternity division of the John Gaston Hospital. All sessions will be held at the hospital.

The program will include lectures, demonstrations, and ward rounds. Participation in the program, which will be acknowledged for credit by the American Academy of General Practice, will be limited to 20 physicians.

Further information may be obtained from the Postgraduate Department of the University of Tennessee College of Medicine.

(continued from page 447)

Roll Call
Report of Auxiliary Presidents, Officers and Chairmen
Credentials and Registration—Mrs. Lee Reid, Jackson
Adjournment

12:30 p.m. Auxiliary Luncheon, Roof, Heidelberg Hotel, Mrs. S. L. Bailey presiding. Honoring Mrs. DeWitt Milam, Monroe, La., 4th Vice-President A. M. A. Auxiliary, and Mrs. Geo. D. Feldner, New Orleans, President S. M. A. Auxiliary

Invocation—Mrs. George W. Owen, Jackson
Greetings from Auxiliary to S.M.A.—Mrs. George D. Feldner, President S.M.A. Auxiliary
Greetings from Auxiliary to A.M.A.—Mrs. DeWitt Milam, 4th Vice-President

2:45 p.m. Style Show—Kennington's

Wednesday, May 12

7:30 a.m. Past Presidents' Breakfast, Green Room, Mrs. Richard H. Clark, Hostess
8:30 a.m. Registration, Heidelberg Lobby Arcade
9:00 a.m. General Session, Heidelberg Roof—Mrs. S. Lamar Bailey, Presiding

Invocation—Mrs. J. Walton Lipscomb, Jackson
Greetings from M. Q. Ewing, M.D., President M.S.M.A,
Greetings from Cummings H. McCall, M.D., President-Elect M.S.M.A.
Memorial Service—Mrs. R. B. Zeller, Hazlehurst
Roll Call
Reading of Minutes
Recommendations from the Board
Business
Report of Nominating Committee
Election of Officers
Appointment of Delegates to A.M.A.
Credentials and Registration—Mrs. Lee Reid, Jackson
Courtesy Resolutions
Installation of New Officers—Mrs. DeWitt Milam, 4th Vice-President, Auxiliary to A.M.A.
Presentation of Gavel and President's Pin
Response of Incoming President—Mrs. M. M. Snelling, Gulfport
Adjournment

Post-Convention Board Meeting—Mrs. M. M. Snelling, presiding

(Pediatrics—continued from page 442)

its subject. It is my privilege to know the author personally and I know that he has had a great amount of experience and is highly qualified to advise in regard to the subject of the separation of identical twins in schools and elsewhere. However, there is quite a bit of room for serious consideration on the other side of the subject. Matters of this kind require thought and due consideration on the part of physicians who are called upon to advise mothers and fathers in regard to such things.

Deaths

DR. C. R. BERRY

Dr. Charles R. Berry, prominent surgeon-physician at Houston, Texas, since 1929, and prior to that time a surgeon-physician at Tupelo for about 12 years, died at Houston following an extended illness. He was 70.

Dr. Berry, who was a brother of the late Joel Nelson Berry of Tupelo, leaves his wife; a son, Charles R. Berry, Jr., both of Houston; his sister, Miss Linda Berry; and a step-daughter, Mrs. Dukes of Jackson, Miss.

Born at Sardis, Miss., Dr. Berry was the son of the late Rev. Julius Simpson Berry and Mrs. Margaret Walker Berry, and resided in Baldwyn, Booneville, and Blue Mountain when his father was pastor of Baptist churches in those towns.

He was a graduate of Mississippi College, University of Mississippi and Tulane University, a fellow in the American College of Surgeons, a Shriner, a deacon in the Houston Baptist Church, member of Delta Tau fraternity, and during his younger years was an enthusiastic duck hunter.

Prior to coming to Tupelo about 1917, Dr. Berry practiced medicine at Columbus and at the Gilmore Sanitarium in Amory.

The home address of the Berry family in Houston, Texas, is 2533 Gramercy Boulevard.

DR. BERNARD BOOTH

Dr. Bernard Hess Booth, veteran Delta physician, died at his home after an illness of four years. He was 78.

Born in Guntown, Miss., Dr. Booth had been a physician in the Mississippi Delta 52 years. He finished medical school at the University of Tennessee.

He was a Methodist and for 30 years served as a Sunday school teacher and was an honorary member of the board of stewards. He was a charter member of Drew Lodge 449, Free and Accepted Masons, and recently was honored at the 50th anniversary of the lodge.

He was a member of the American Medical Association, a Shriner, and a Rotarian for 25 years. He held honorary membership in the Drew Rotary Club at the time of his death.

He was a veteran of World War I and first commander of Drew American Legion Post. He retired from active practice four years ago.

He leaves his wife; a son, Bernard Hess Booth Jr., of Drew; three daughters, Miss Emily Booth and Miss Ruth Booth, both of Drew and Mrs. W. B. Hall of Heth, Ark., and five grandchildren.

DR. J. E. McCONNELL

Dr. J. E. (Jim) McConnell died at a hospital in Baton Rouge February 2. Dr. McConnell came to the Sanatorium as a patient in 1950 and joined the Sanatorium medical staff at that time. Feeling that with the knowledge he had gained from his experience in the institution, he could better serve his fellowman as a general practitioner, he joined his brother in private practice in Baton Rouge in June 1952.

Dr. McConnell was beloved by patients and employees.He was not just a doctor, he became the friend of those whom he treated.

Surviving are Mrs. McConnell, Dottie, Nina, Jimmy and Robie Lee.

He was a graduate of the LSU Medical School New Orleans, La., class of 1940.

DR. H. R. FAIRFAX

Dr. H. R. Fairfax, prominent Brookhaven physician who had been practicing medicine for over 50 years, died at his home, February 16.

A native of Virginia, Dr. Fairfax was graduated from the Virginia Medical College at Richmond, Va. He had done post-graduate work at Tulane and had studied in Vienna, Austria. Dr. Fairfax came to Brookhaven about 30 years ago. He was 78, a member of the Tri-County Medical Society, a Mason and a member of the First Methodist Church.

Surviving are his wife, Mrs. Nell Randolph Fairfax; a daughter, Mrs. Collin Baker of Tampa, Fla.; two sons, Cary Fairfax of Lynchburg, Va. and Randolph Fairfax of Atlanta, Georgia; a brother, Ronald Fairfax of Virginia.

DR. HIRAM BREWSTER

Funeral services were held at Cokers Methodist Chapel, Vimville, January 19, for Dr. Hiram Washington Brewster, 88, pioneer physician and land owner of Vimville.

Recognized throughout this section both as a practicing physician and successful farmer, the deceased had ministered to the sick for approximately 60 years before retiring several years ago due to ill health. He was a leader in affairs of his community as long as his health permitted, and was one of the oldest members of Cokers Chapel Church.

Dr. Brewster was graduated from the University of Tennessee in 1890, doing post-graduate work at Tulane. Last year he was awarded a certificate of merit during graduating exercises at the University of Tennessee branch in Memphis when the class of 1890 was honored. The Vimville doctor was the oldest at the meeting, as well as being the last member of the class.

Dr. Brewster is survived by three daughters, Mrs. Frances Coker, James Stoddard, Vimville, Mrs. Oscar Gough, Panama City, Fla., four sons, Hamilton, John Hiram, Vimville, and Fred Brewster, Jennie, Ark., 13 grandchildren, 17 great-grandchildren, nieces and nephews.

DR. C. C. CONNER

Services for Dr. Curtis C. Conner of Mt. Pleasant were held at the Conner residence there March 2, following a long illness.

Dr. Conner was 76. Born at Sardis, he was the son of James Bernard Conner and Margaret Hays Conner.

In 1909 following his graduation from the University of Tennessee Medical School, he married Miss Kate Cornish and moved to Mt. Pleasant where he practiced medicine until February 1951 when he retired because of his illness. He was an honorary member of the American Medical Association, Mississippi State Medical Associatior and the Mississippi Medical Society.

He leaves his wife, two daughters, Mrs. W. J. Burton of New Orleans, Louisiana, and Mrs. Julian Owen of Mt. Pleasant; two brothers, Johnnie Conner of Como and Rev. J. B. Conner of Sardis; one sister, Mrs. Mary Wright of California and two grandchildren.

WANTED: A desirable general practice location by young M.D. with two years of residency training. Write Dept. A, The Mississippi Doctor, Booneville, Miss.

BOOK SECTION

INSTALLMENT 11

Atlas of Rush Pin Technics

LESLIE V. RUSH, M.D.
Department of Surgery
Rush Memorial Hospital
Meridian, Miss.

This is the eleventh of a series of monthly installments to be published in *The Mississippi Doctor* during the coming year. The monograph on fracture surgery will be available in bound form in 1954.

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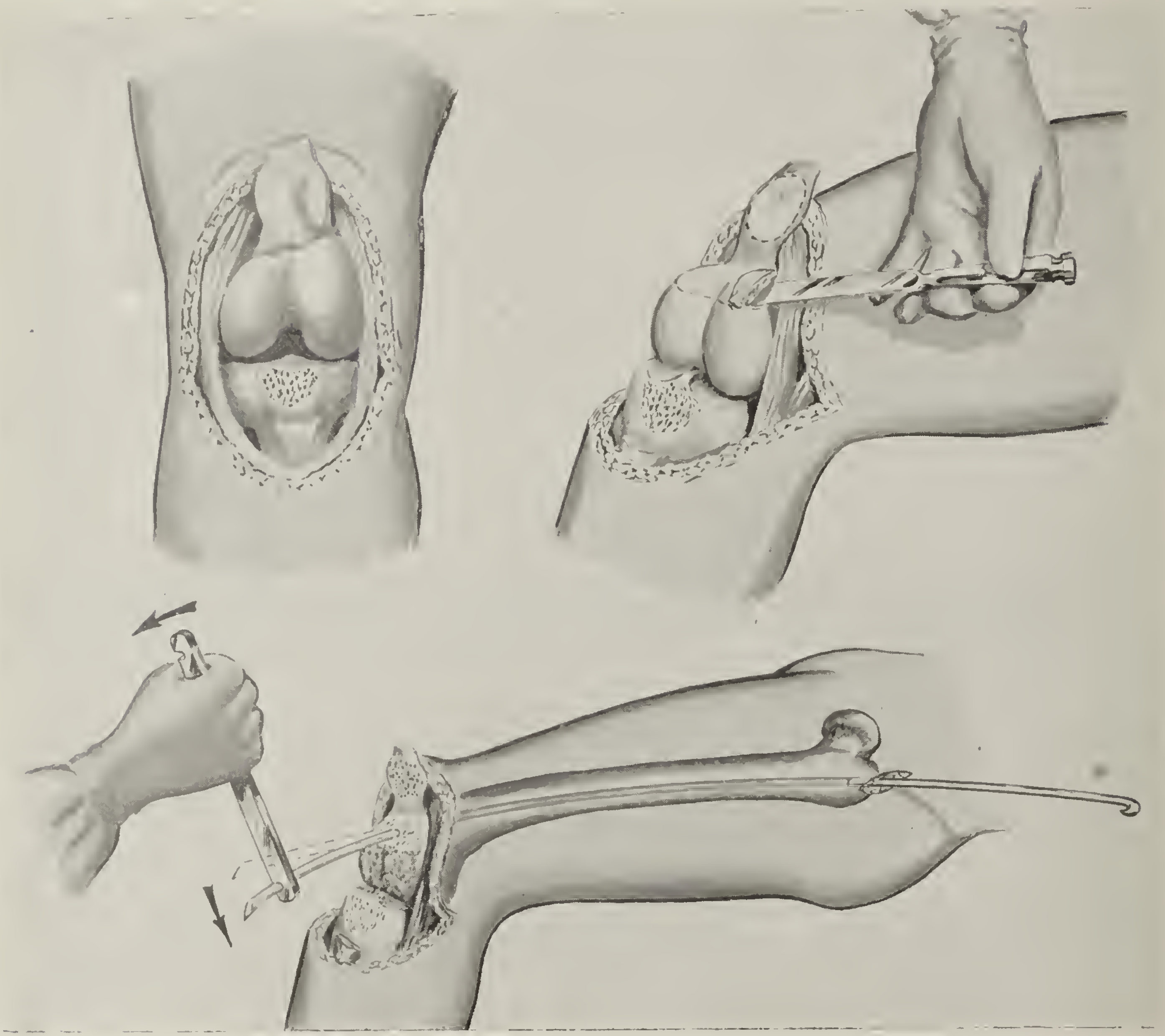


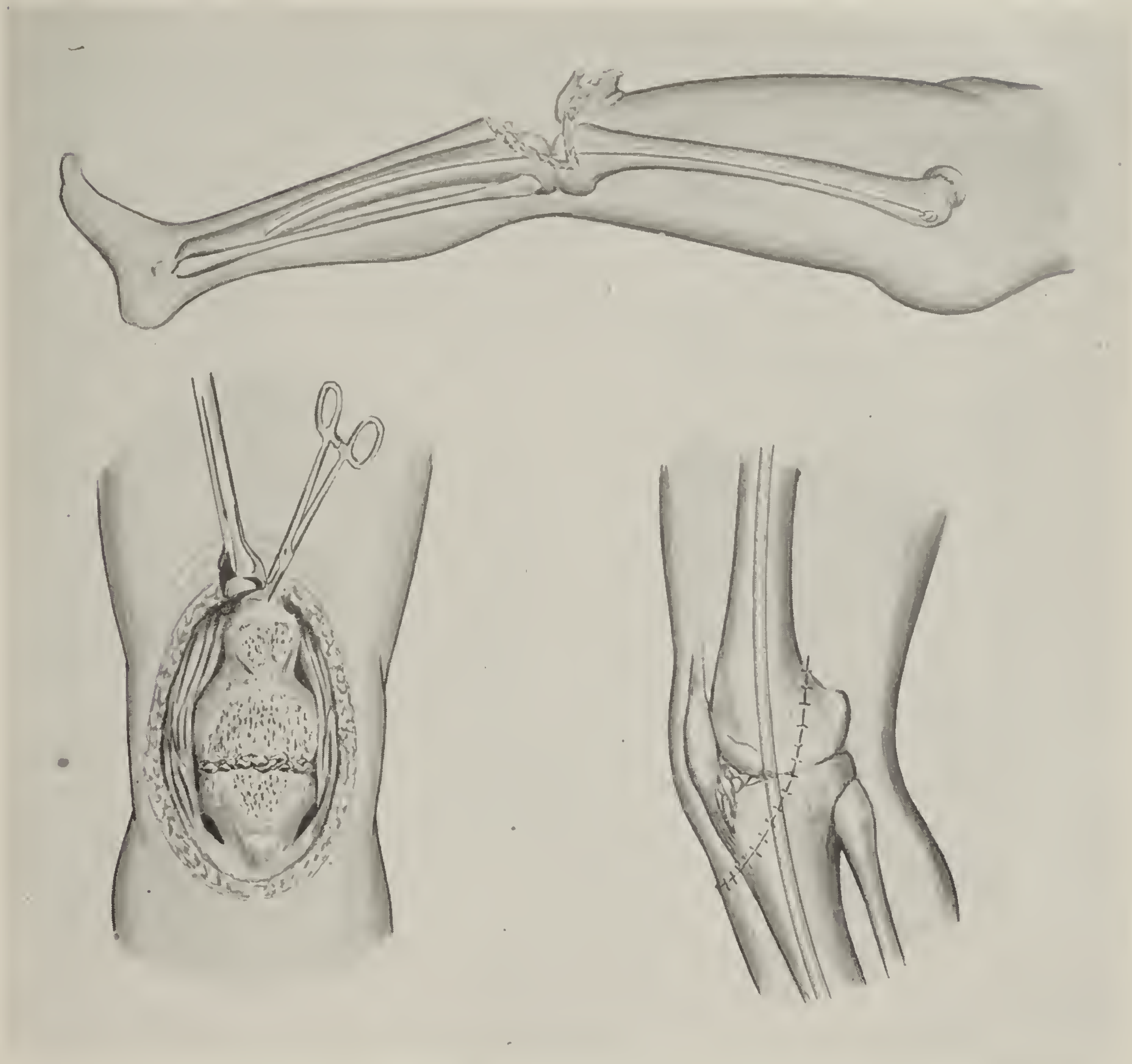
19

ARTHRODESIS KNEE

The efficiency of this operation can be greatly enhanced by use of the medullary pin. It requires a pin of special length to extend from the great trochanter of the femur to the lower tibia. The diameter of the pin may be 1/4 inch or 3/16 inch. The larger pin gives more stability, but the smaller one is easier to manipulate.

The pin is introduced as for the regular femur shaft fracture. After the joint has been prepared for fusion, the point is driven out the lower end of the femur for a distance of four to five inches. It has a tendency to emerge farther anteriorly than desired. The point is directed posteriorly with the sled runner anterior. The bending iron is applied as shown to direct the point more posteriorly.

By partially extracting the pin, the point is drawn back into the femoral shaft for a distance of four or five inches. When the pin is redriven, the point will emerge more posteriorly within the joint.



It can then be driven down the tibia, keeping the point posterior so that the sled runner glides down the tibial crest. The knee is forcibly bent if further flexion is desired.

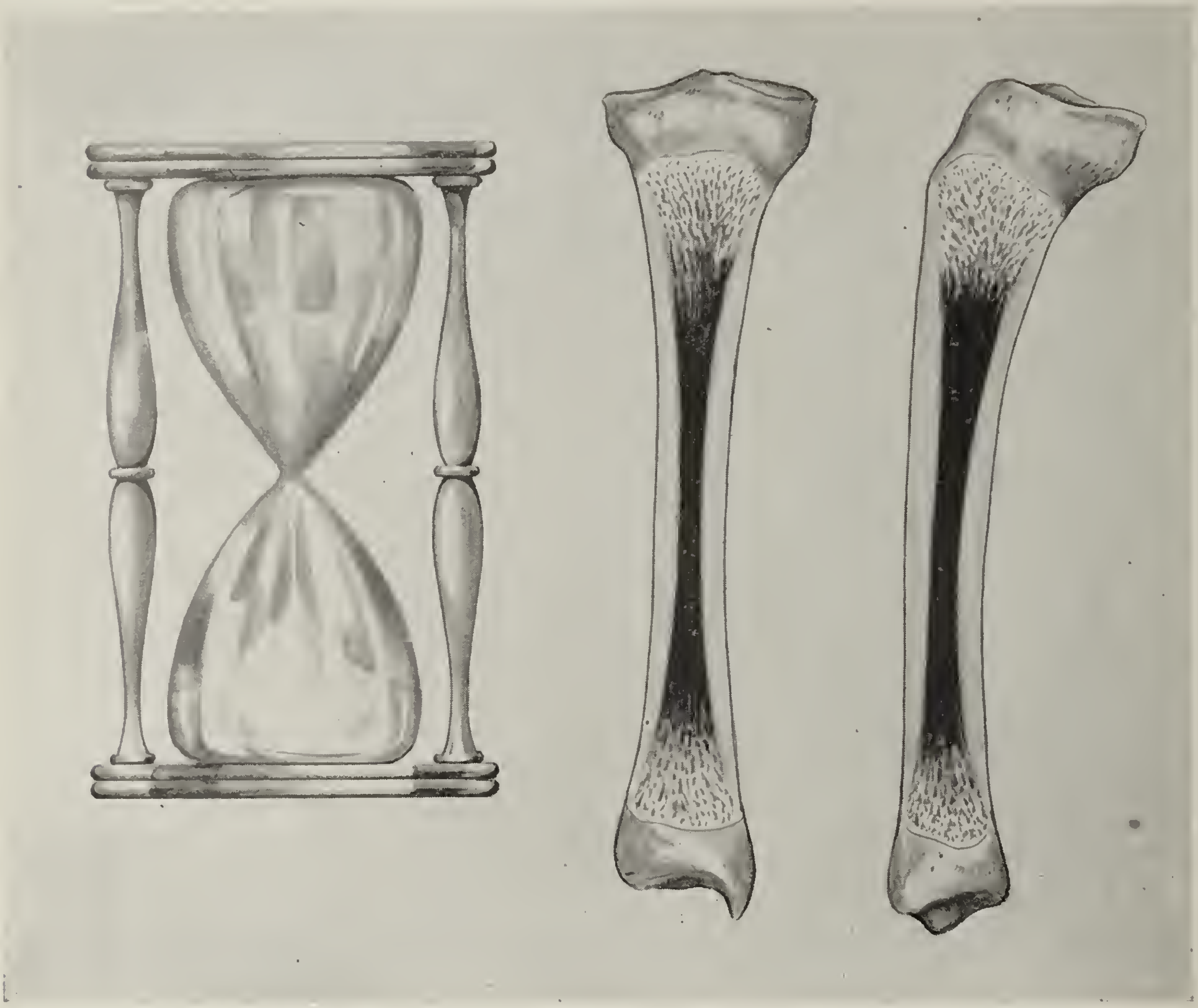
The cruciate ligaments are cut. The articular surfaces of the patella, femur, and tibia are denuded. The joint contour is preserved except that the surfaces of the femoral condyles are flattened. Cortex is removed from the upper tibia.

Chip bone grafts are secured from the anterior surface of the femoral condyles and packed into all existing joint spaces and to make a bed for the patella.

The KES dressing is applied from the groin to the toes. It is reapplied at intervals of three weeks until healing is secure.

This application of the pin has been found to be both simple and efficient.

There are many satisfactory fusion operations. The one shown here utilizes the curved incision preserving the collateral ligaments.



The tibia is not too unlike an elongated hour glass.

20

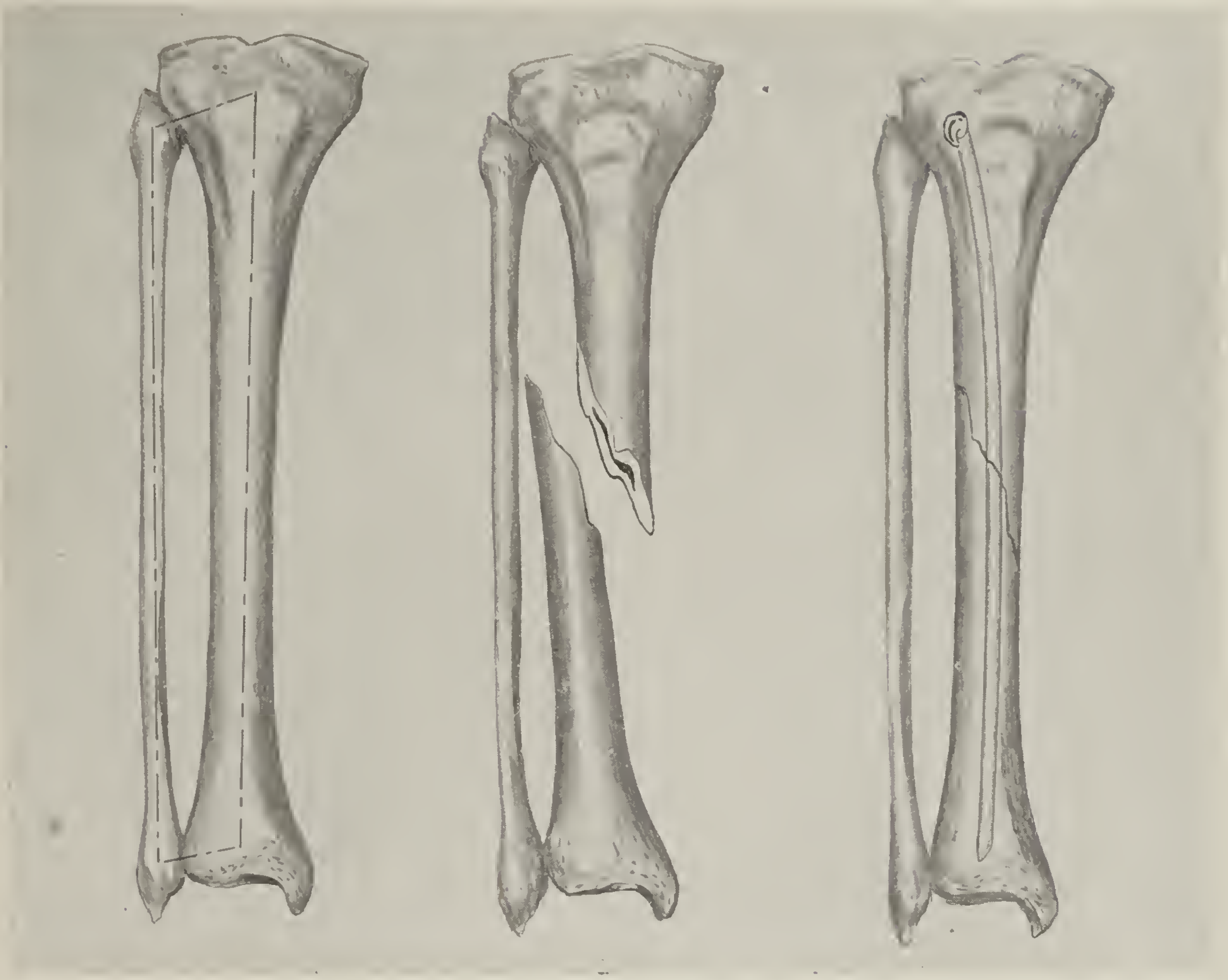
TIBIA

This is an ideal bone for medullary pinning. Those inexperienced in the technic will find the mid-shaft of the tibia an excellent place for the initiation.

The tibia is not too unlike an elongated hour glass. It is acted upon by muscle pull to less degree than most long bones. The displacement is largely due to the force of violence, although the general tendency is toward anterior bowing because of the pull of the gastrocnemius and soleus muscles. Flexion of the knee relaxes the gastrocnemius and simplifies both reduction and pinning.

The fracture table is rarely necessary. Since the bone is superficial and reduction is usually accomplished easily, closed pinning is very often indicated. Yet, semi-open reduction can here be carried out so simply and with so little trauma that repeated attempts at closed pinning are seldom justified.

After initiation one will find many and varied methods of single or multiple pinning advantageous in certain injuries. But basically, the single curved pin best serves the purpose in the majority of fractures of the mid-half of the tibial shaft.



Don't Sell the Fibula Short

It is true that a normal leg can do very well without the mid-shaft of the fibula. But in fractures of the leg it can exert a profound influence for good or evil.

It has not been our custom in the past to pin the fibula shaft. We now doubt the wisdom of this omission.

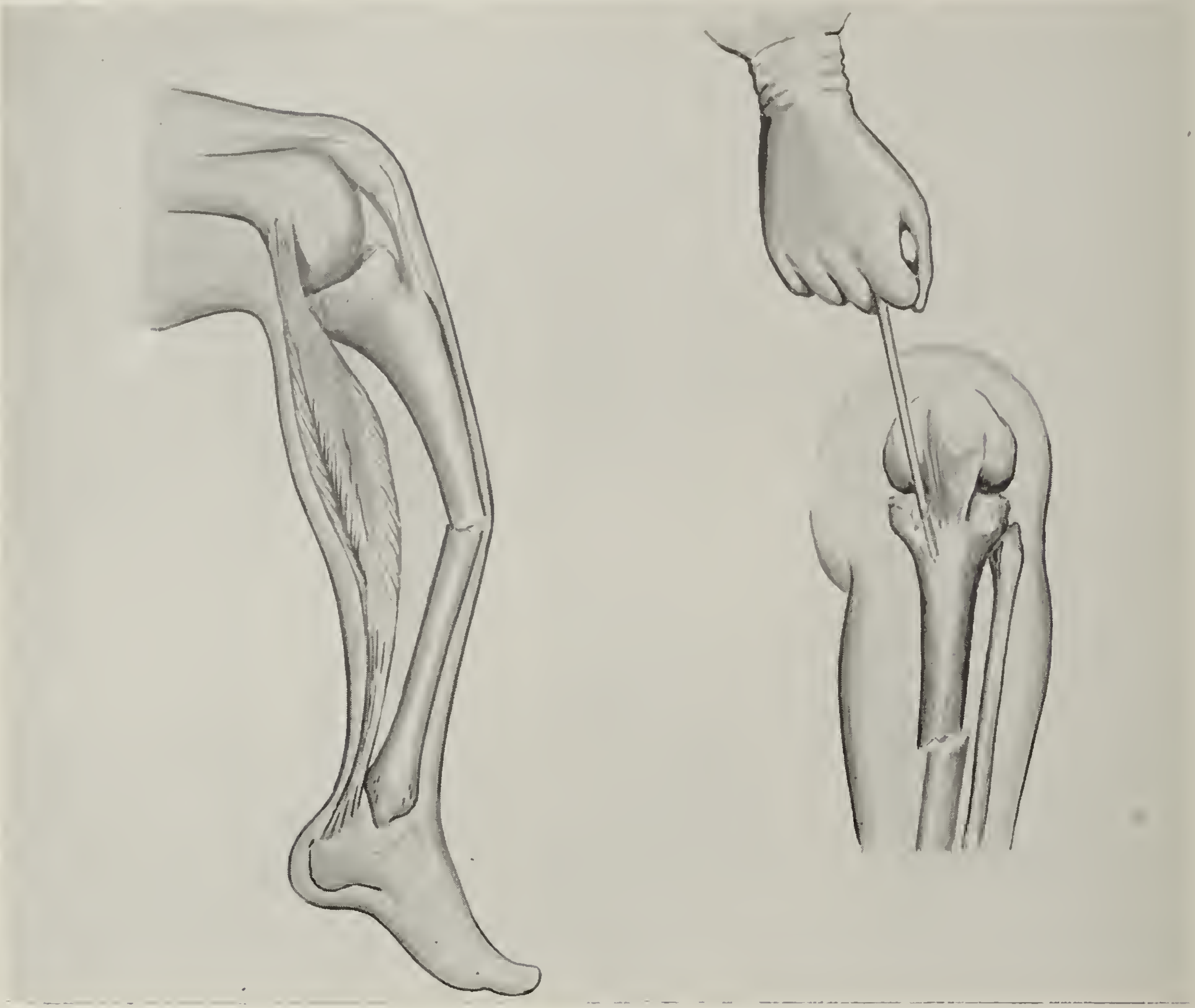
The intact fibula can be a marvelous stabilizing force. The fracture shown above can be made thoroughly stable without need for external fixation if the tibio-fibulal parallelogram is thoroughly reconstructed. This requires complete reduction with adequate transfixion.

The tibia must be encouraged to heal quickly. The fibula out-heals the tibia. In the event of delayed healing of the tibia, distraction can be maintained by the intact fibula and without the stimulus of contact compression, non-union can result.

It should not be forgotten that the weight of a plaster cast can cause distraction. To encourage the tibia to heal quickly, it requires stable fixation with compression. We must be kind to the bone and soft tissue envelope. Function must be restored quickly, but weight bearing cautiously. ROTARY STRESS OR ROCKING FROM INJUDICIOUS WEIGHT BEARING CAN PRECIPITATE NON-UNION.

Chip bone grafting of the tibia is a simple procedure and should not be delayed too long if healing appears sluggish.

At the ankle the fibula is of great importance, and pinning can prove invaluable.



Mid Shaft

The gastrocnemius and soleus muscles act as a bow string so that the tibia tends towards anterior bowing. The purpose here is to resist this intrinsic force in the application of the pin.

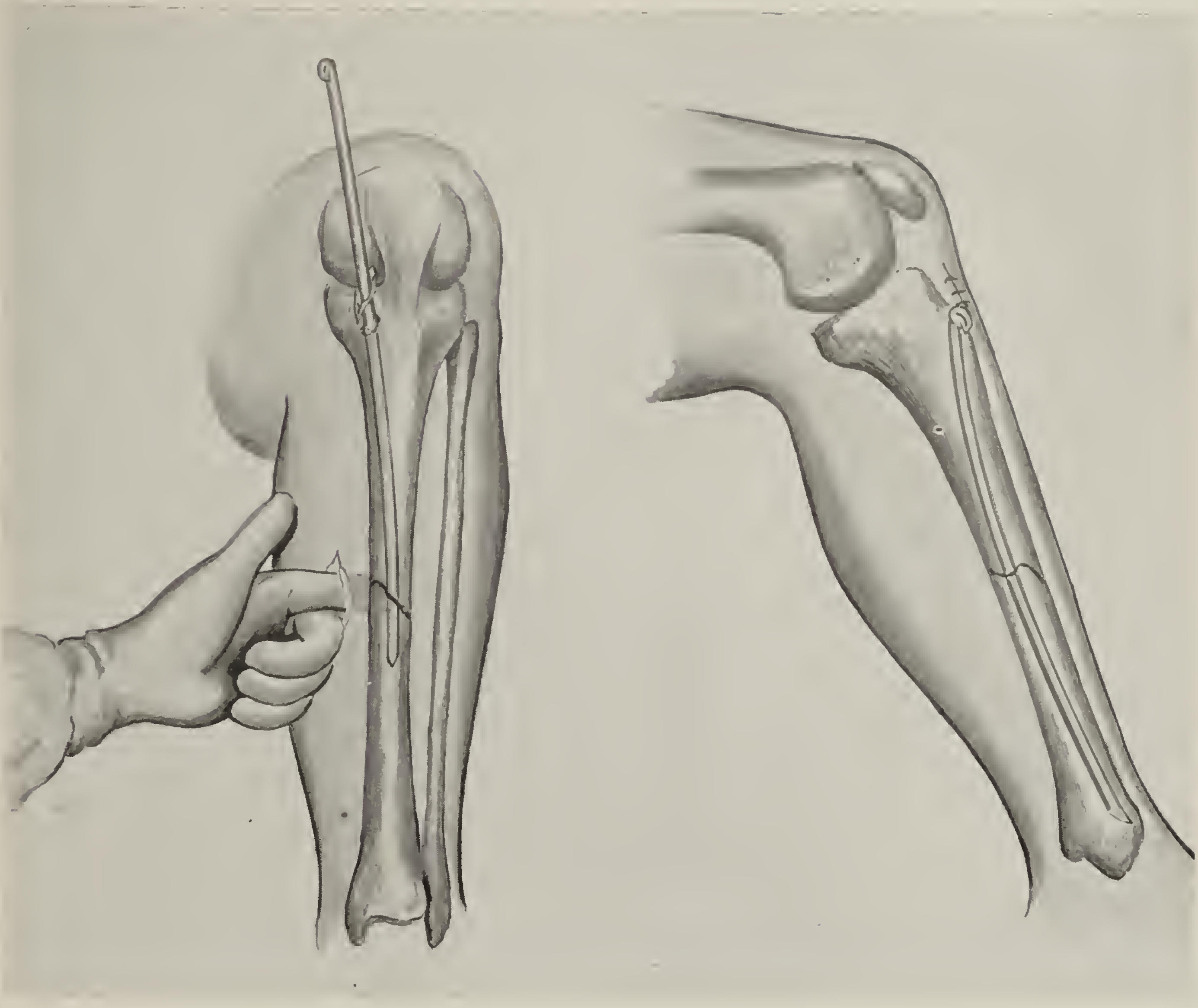
TECHNIC: With the knee flexed 90°, a three-fourths inch stab wound is made slightly above and medial to the tubercle and just medial to the patella tendon.

The pin of proper diameter (3/16 or 1/4 inch) and length is chosen. It may be used straight or given a curve with the bending iron.

An opening is made with the awl reamer the same size as the pin chosen. The pin is pushed through this opening with the hook directed anteriorly. The sled runner strikes the posterior cortex and is deflected so that the rod travels down the medullary canal to the fracture site. Strong traction is made on the foot and the fragments manipulated manually if necessary.

If reduction is good, the pin can be driven across the fracture line uneventfully as a closed procedure. As the pin passes the fracture line, one can usually tell from palpation if it has entered the distal segment. If the bone is felt to widen, it means the point has emerged through the fracture line. It should be partially withdrawn, the head rotated 90° to 180° and redriven.

Should difficulty be encountered crossing the fracture line, make a one-inch incision medial to the tibia and insert the



index finger as a guide and to secure a more accurate reduction.

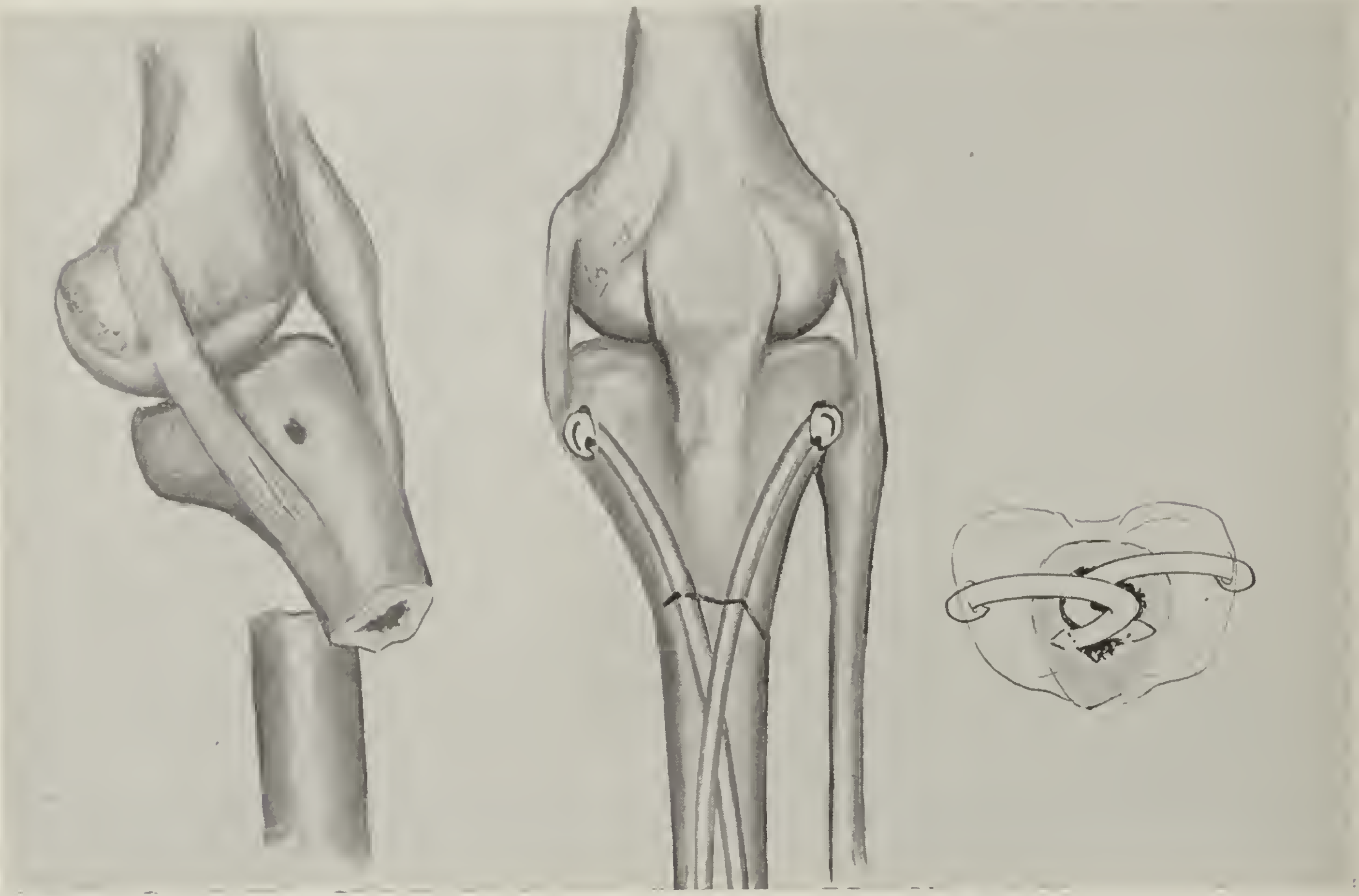
Secure roentgenograms in both views before setting the head. The hook of the pin should be directed anteriorly. If a straight pin has been used, stress relieve the head slightly to prevent its migration into the bone from pressure. Too much bend will lessen the stability of fixation.

Test leg for stability. External splinting may or may not be needed. If there is tendency to rocking or rotation, apply KES dressing from mid-thigh to toes. After two weeks this can be replaced by elastic bandages and removable plaster splints which include the sides of the ankle, but not the foot. These will be shown later.

Of the two diameter pins used, the smaller (3/16 inch) is indicated in children and small adults. It is the easier of the two to direct and manipulate because it has greater flexibility. However, because of this, additional plaster splints are more often necessary than with the 1/4 inch pin.

The curved pin is more efficient than the straight pin in most fractures but cannot be directed across the fracture line as easily in a closed procedure.

The 1/4 inch pin is indicated in most adult males.



High Shaft Fractures

Here again we must deal with the same problem as in the supracondylar femur fracture. It is interesting to note the similarity of the problems in the different regions of the extremities.

It is obvious that in this fracture the proximal fragment is short and a single pin cannot secure three-point pressure. So with a single pin, angulation and insecure fixation are to be expected.

Double pins (3/16 inch) accomplish the purpose here in the same manner as in the supracondylar femur fracture. The technic is essentially the same.

TECHNIC: Upward counter traction beneath femoral condyles. Knee flexed 35° to 45°. Strong traction on foot.

The lateral joint margins of the tibia can now be palpated.

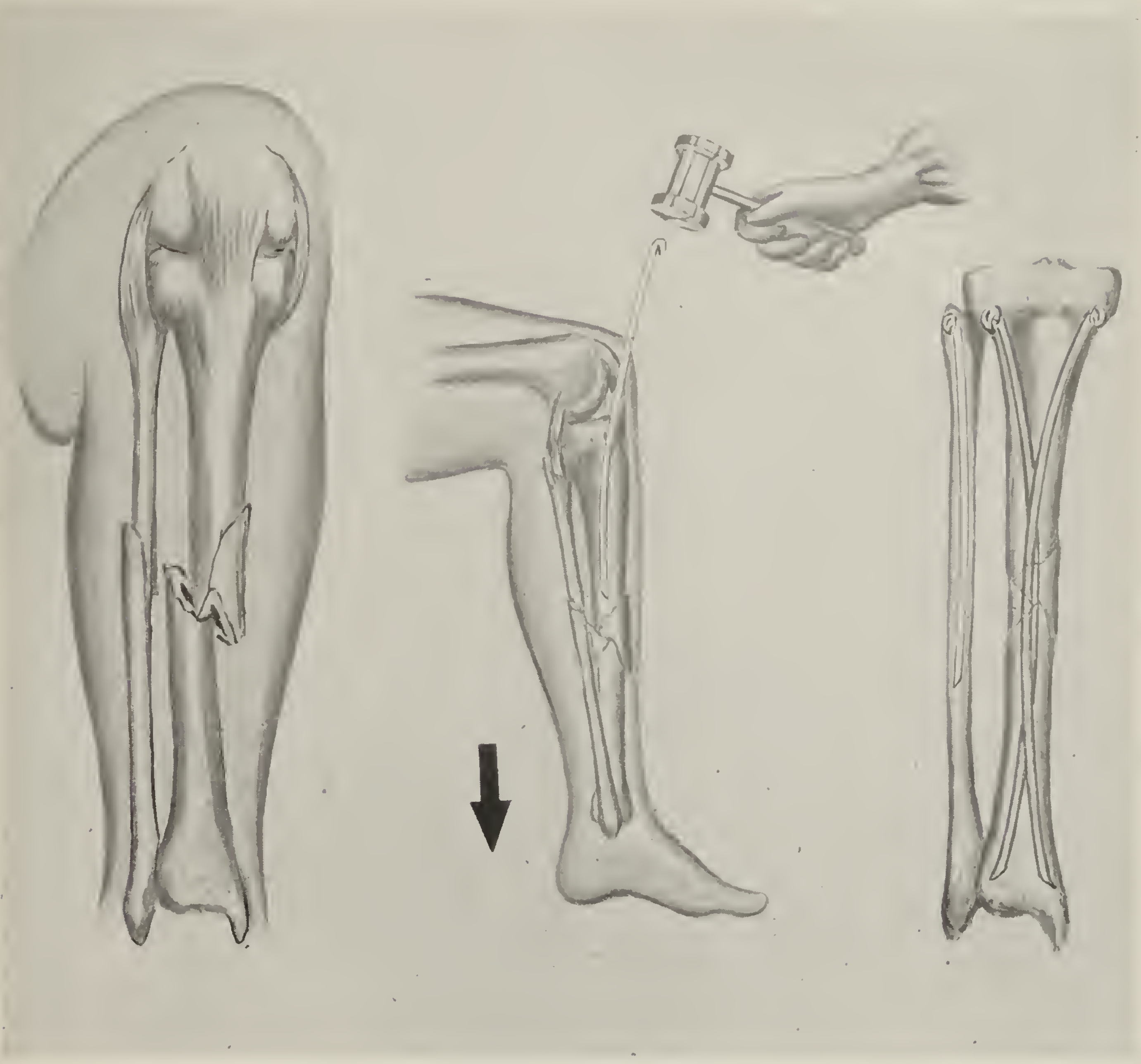
Make 3/4 inch stab wound laterally over each tibial condyle. Start opening with awl reamer directing it at a point on the tibial crest about five inches below the knee joint.

Insert 3/16 inch pin straight about nine or ten inches in length. Push into bone. Repeat procedure in other condyle.

The lateral condyle can prove troublesome in some patients. It is shelf-like.

The hooked head is always directed laterally so sled runner engages opposite cortex. Drive pins simultaneously with alternate tapping with mallet. There is a characteristic feel to the resistance encountered. If the pin drives hard, it has been placed at the wrong angle (too transversely). If it drives too easily, the point has emerged through the fracture line. In this event the direction of the opening should be changed and if necessary the pointed end of the pin can be bent slightly.

The operation is usually done as a closed procedure, but when necessary a small incision can be made medial to the bone to allow finger manipulation. The heads should be stress relieved.



Double Pins for Shaft

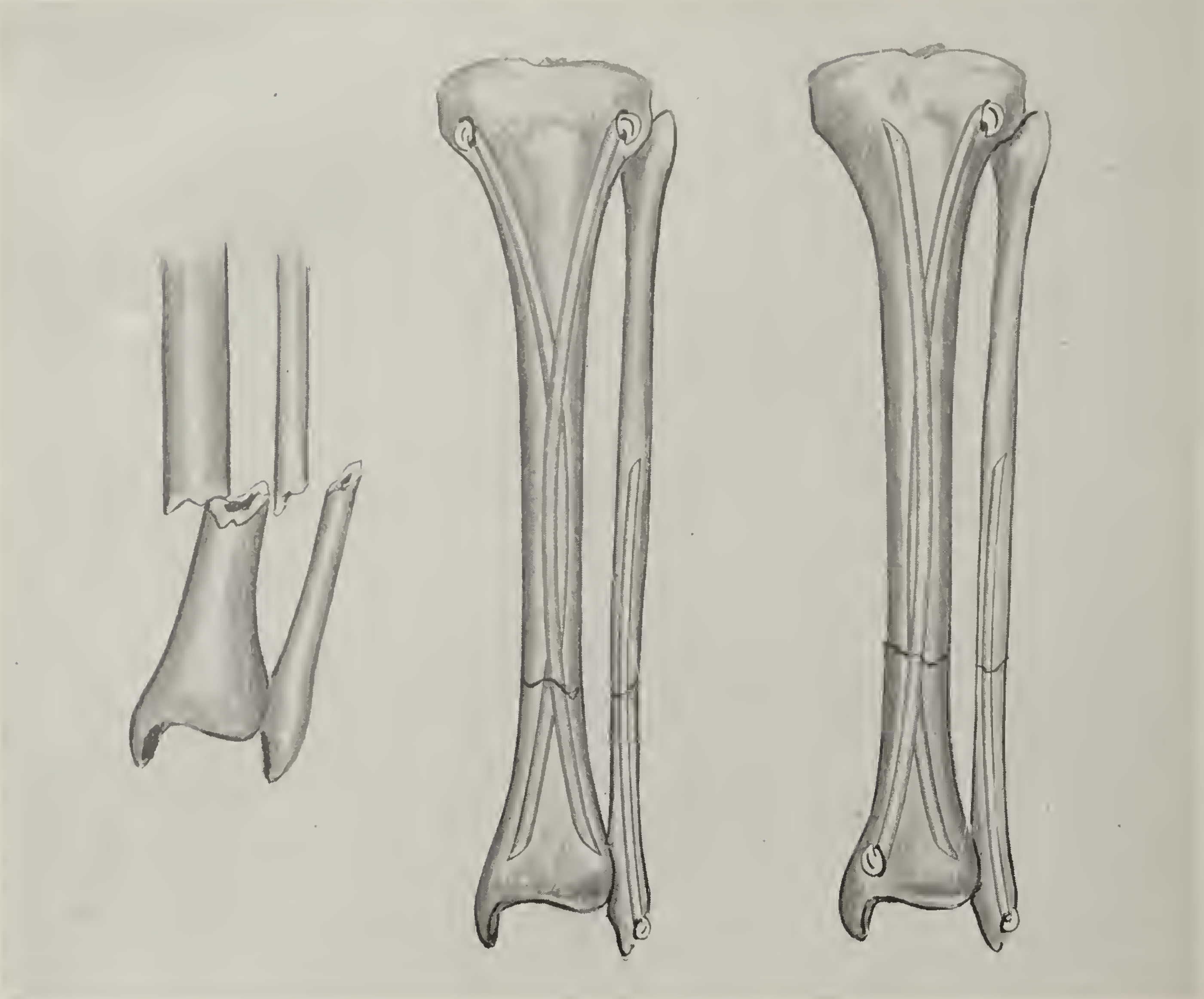
This same procedure can be modified for certain shaft fractures. When the medullary cavity is extremely large, especially in the elderly, a single medullary rod will not give stable fixation. And comminution of the fragments intensifies the problem.

The tendency in this operation is to choose pins which are too short. Some extra length must be allowed to compensate for the curve.

In a case of this sort, semi-open operation is far superior to open reduction. The latter destroys the soft tissue envelope about the fragments which is necessary to maintain apposition.

Here the operation is done with the knee flexed 90° with traction on the foot. When the fracture line is this low, the pins can be introduced with little difficulty. Circular wires might be used. The pin in the fibula is optional.

Apply KES from mid-thigh to toes with knee in almost complete extension.



Lower Shaft

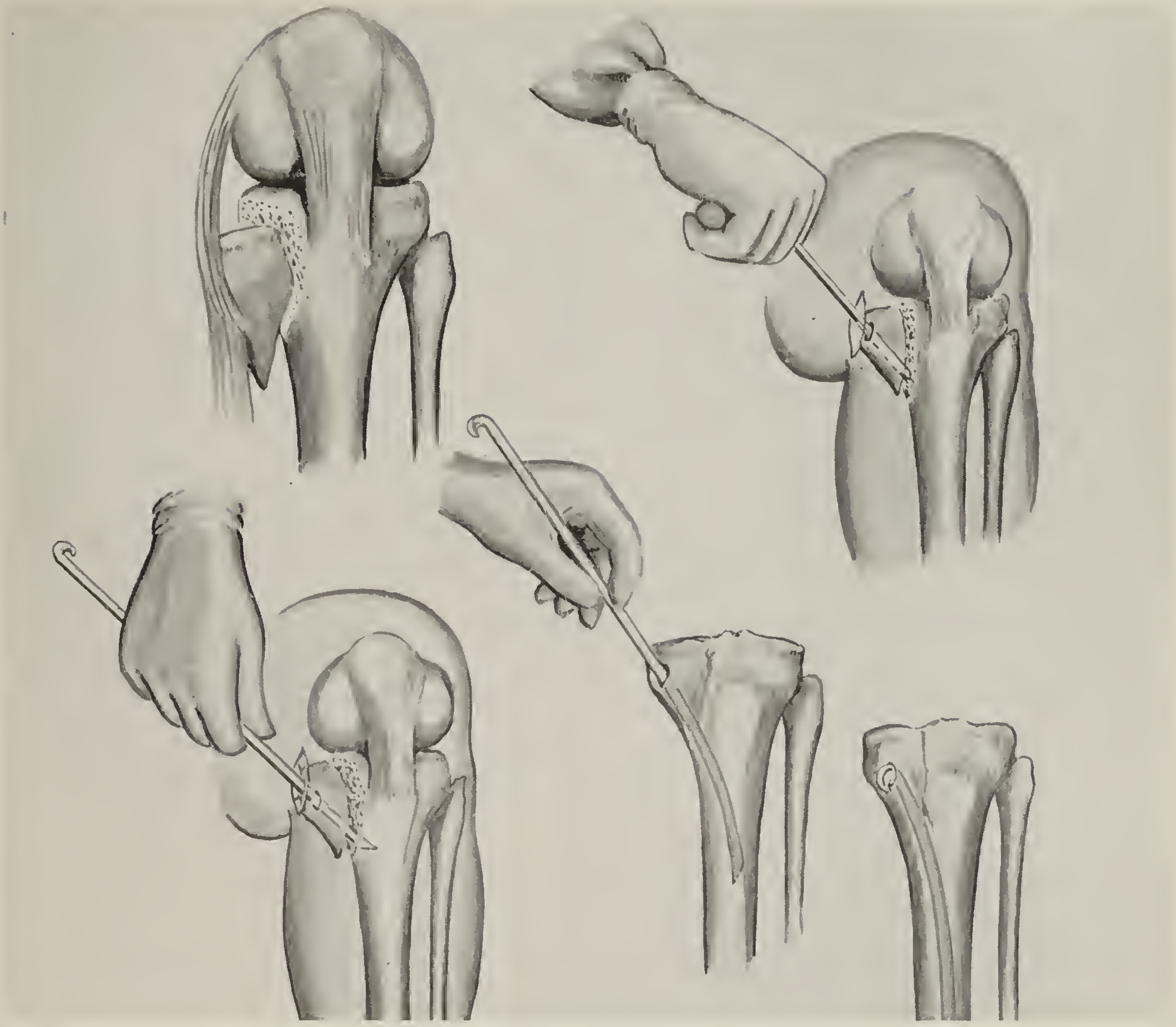
This is a real problem. The single pin technic will not always stabilize the lower fragment.

The technic just described is excellent for this fracture. Or, as shown, the curved pin from the external condyle may be used combined with a similar one driven upward from the lower portion of the distal fragment.

Driving a pin upward from the lower fragment can be a frustrating procedure. The opening for the pin should *not* be in the medial malleolus. It should be above and anterior to this point and high enough above the ankle joint to safe-guard against migration of the head into the joint. A pin which migrates into the ankle is painful and difficult to remove.

If a single straight pin is driven upward through this short lower fragment, angulation will occur unless the proximal portion of the pin is shaped with the bending iron to fit the contour of the bone. And by this procedure some stability can be lost.

In this region of the tibia slow healing is to be expected. Use plaster splints to guard against "rocking" from motion of the foot. The pin shown in the fibula is 1/8 inch in diameter. The fibula usually requires open reduction at this level, but this additional pin markedly enhances stability.



Tibial Condyles

These can often be fixed as a closed procedure. Reduction is accomplished as in the high shaft fracture. The problem here is similar to that in the condyles of the femur.

The awl reamer makes an opening in the fragment near and parallel to the outer cortex of the fragment. The pin (3/16 or 1/8 inch) is introduced and pushed through this opening. The fragment can often be manipulated by the pin.

The point of the pin is made to engage the fracture surface of the shaft. Sometimes the fragment can be "walked up" slightly by engaging the tapered point at the highest possible level and axially rotating the pin 180°.

As the pin is driven obliquely into the shaft, the sled runner engages the far cortex and is deflected as the pin travels down the medullary canal. The vase of flowers principle comes into play as the head of the pin swings medially to compress the fracture surfaces.

This procedure can be repeated on the other condyle in case of double fracture. The transverse pin may be used if necessary to preserve the integrity of the articular surface as shown in the femoral condyle fractures.

Doctor, when you attend the State Meeting in Jackson you'll find these

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